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An Address.[1]

THE DIAGNOSIS OF THYREOTOXICOSIS, WITH SPECIAL REFERENCE TO THE MASKED TYPES.

By R. WHISHAW, M.B., M.R.C.P., F.R.A.C.P.,
Hobart.

AT the conclusion of my term of office as President of this Branch I wish to express my sincere thanks for the loyal cooperation and help of members during a difficult year.

The profession is passing through a period of great anxiety, and much time, thought and money have been expended on questions of national health insurance.

I should like to thank the members of council, who have put in a great deal of work, particularly our secretary, who has borne the brunt of it, and whose sound advice has been of great help on numerous occasions. Our representatives on the Federal Council and Federal National Health Insurance Committee are deserving of special mention, for they have sacrificed many working days and have travelled literally thousands of miles on our behalf. The northern members of the council have made a fine effort in attending nearly all the meetings, and have also travelled long distances.

I have been anxious throughout this year lest political problems overwhelm clinical discussions, and my efforts to prevent this have met with generous response, as witness some excellent papers that have been read and discussed.

In a review of the work of the past year the problems of national health insurance would bulk

[1] Delivered at the annual meeting of the Tasmanian Branch of the British Medical Association on March 4, 1939.

very largely. Dr. J. P. Major, in a recent address, has dealt with this question in so full and admirable a manner that further discussion on my own part would serve no useful purpose and would be so much wasted time. I have therefore decided to confine myself tonight to the examination of a purely clinical subject.

My subject is "The Diagnosis of Thyreotoxicosis, with Special Reference to the Masked Types".

The literature on goitre must now be as voluminous as that on sulphanilamide. The reason perhaps is that toxic goitre is so protean in its manifestations as to resemble syphilis in that regard.

My excuse for bringing up this subject is that there are still patients, particularly those in middle and later life, in whom the presence of the disease is not always recognized.

Precious time may be wasted on inadequate medical treatment while their hearts pass from the surgically curable stage to that in which degenerative changes not only increase the operative mortality but limit the expectation of life even after successful operation. McEwan[1] in England and Poate[2][3] in Australia have recently drawn attention to the increased incidence of thyreotoxicosis, and the former has also shown that the death rate has increased. I am sure we are all agreed as to its high incidence in Tasmania.

When the disease is fully developed the appearance of the patient is so characteristic that a diagnosis can be made before he has taken his seat in the consulting room. It is the less easily recognized types, occurring particularly in older people, to which I wish to draw your attention.

The following remarks are based on the study of some of the recent literature and of eighty patients suffering from thyreotoxicosis seen in private practice during the last two and a half years. The number is too small for anything of value to be obtained from an exhaustive analysis; but purely from the point of view of diagnosis I hope the following may yield something of interest. I have made no attempt at classification. Such an authority as Sir Alan Newton, in his latest most valuable article,[4][5] states that although it is generally agreed that there are two main types, exophthalmic goitre (primary Graves's disease) and nodular toxic goitre, yet there are numerous cases of intermediate type which are difficult to classify in either group. Suffice it to say that here, as elsewhere, the primary cases are less frequent, and occur in younger people. After reading articles from abroad one forms the impression that we see perhaps less of the very acute fulminating type, but a large number of mild and moderate cases.

It is the "grumbling thyreoid"[6] in elderly people which causes so much cardiac damage and which is often masked or missed. Exception has been taken to the term "masked";[7] but although incorrect it is universally accepted. "Masked thyreotoxicosis" is used here in its broadest sense to include all those cases in which the diagnosis has been either missed or not made with confidence after one careful examination.

To facilitate description I have divided these patients (very arbitrarily) into the following four clinical groups:

Group I consisted of 23 patients with classical types of thyreotoxicosis. The diagnosis in this group was obvious, although it was rare to find all classical symptoms and signs present, especially exophthalmos.

In Group II there were 22 patients with mild types of thyreotoxicosis. These patients fitted Poate's description of what he calls "hyperthyreoidism".[2] The disease either was present in an early stage or ran a benign course, and medical treatment appeared to be indicated. The diagnosis was sometimes provisional. Toxæmias from other causes had to be first eliminated, particularly incipient tuberculosis; but the chief difficulty encountered was in the differentiation of anxiety states and neuro-circulatory asthenia. This difficulty was increased in the presence of a simple goitre. Nearly all these patients were below the age of thirty-five years.

Group III consisted of eight patients with residual types of thyreotoxicosis. These patients had residual symptoms (*a*) after operation and (*b*) after the disease appeared to have burned itself out. The symptoms were psychogenic or vasomotor in origin, but one case of tetany and two of submyxœdema are included.

In Group IV there were 27 patients with masked types of thyreotoxicosis.

The ages for the whole series ranged from eight to seventy years; but in Group IV the average age was greater. These patients were middle-aged or elderly. It is interesting (though perhaps not of significance) to note that the proportion of males was much increased in this group.

It is Group IV that I wish to discuss.

The mask is produced by the symptoms, and to some extent by the signs found, and may be described under the following headings: (i) the cardiac mask, (ii) the gastro-intestinal mask, (iii) the psychoneurotic mask, (iv) the mental mask, (v) the diabetic mask.

The Cardiac Mask.

Levine[8] has made the following statement:

> The recognition of thyrotoxic heart disease is perhaps the most important aspect of all heart disease, for it comprises the one large group of cases in which the difference between accurate and inaccurate diagnosis and treatment is the difference between chronic invalidism or death and restoration of health and life.

The cardiac mask is encountered in elderly and middle-aged people with low-grade thyreotoxicosis. The symptoms of which they complain are those of any heart disease—breathlessness, palpitation, chest pains, weakness and even swelling of the feet and cough.

These patients are at the ages when degenerative cardio-vascular disease is most frequent, particularly coronary and hypertensive heart disease. When

organic heart disease is actually present the thyreoid element is more obscured and more likely to escape recognition, particularly when goitre and exophthalmos are absent, and the pulse rate is increased little if at all. Rarely a goitre cannot be detected; but much more commonly a small nodule is present, which may be found only by careful palpation of the neck. Occasionally it may be retrosternal; not uncommonly it is behind the manubrium and can be felt when the patient is asked to swallow.

Exophthalmos is rare. A slight stare is frequent, but quite often no abnormal eye signs can be discovered.

The ageing heart, constantly over-driven by the over-active thyreoid, produces symptoms due to latent heart disease, which in the ordinary course of events would not appear for years.

What signs of thyreoid disease can be detected by a study of the heart and circulation alone? Cardiac enlargement is present only in cases of long standing, and recent work by H. Gotta[9] suggests that coincident disease is present in all cases in which the heart is appreciably enlarged. Tachycardia, though most often of mild degree in elderly people, is fairly constant. A few have a pulse rate of 80 per minute, which adds greatly to our difficulties. The rate, however, is unstable, and is often accelerated by slight emotion or exercise.

The heart is usually over-active, and this may be appreciated by palpation of the apex in thin patients and by examination under the fluorescent screen. It is to some extent also reflected in the pulse. The heart sounds, too, often have a slapping quality, especially the first sound at the apex, but this is by no means invariable.

Hypertension is common at this age period; but "thyreotoxic hypertension" is too frequent a combination to be fortuitous, according to Parkinson and Hoyle.[6] The special feature of thyreotoxic hypertension is the high pulse pressure; the systolic blood pressure is usually quite high and the diastolic normal or below normal, giving a collapsing quality to the pulse.

When hypertensive heart disease complicates the picture, the pulse pressure is lower and the heart is enlarged considerably. It is particularly in patients with thyreotoxic hypertension that auricular fibrillation (rarely flutter) is encountered. Parkinson has urged that when this combination is found goitre should first be considered as a possible cause.

Auricular fibrillation may be paroxysmal in the early stages, but often becomes permanent later, leading to congestive failure. The latter is difficult to control with digitalis. Even after the patient has received full dosage of digitalis the pulse rate often does not fall below 100 per minute. This fact might be useful in directing the physician's attention to a possible masked thyreotoxicosis.[8]

Thyreotoxic angina is another combination sometimes met with—"latent coronary disease unmasked by thyrotoxicosis".[6] The latter *per se* is not a cause of angina in the absence of coronary sclerosis. The effect of thyreoidectomy on patients suffering from thyreotoxic heart disease is little short of miraculous.

Auricular fibrillation, *angina pectoris*, and even congestive heart failure, far from being contra-indications, are now regarded as urgent indications for operation. Occasionally the cardiac signs resemble those of mitral stenosis.[8] Thus a systolic murmur, accentuated first heart sound over the mitral area and auricular fibrillation are common to both, and the timing of the murmur may be difficult in mitral stenosis with rapid heart rate or fibrillation.

Of the 27 patients in Group IV, fifteen had the cardiac mask to a greater or lesser degree. Ten of these fifteen had thyreotoxic hypertension. Four suffered from thyreotoxic angina. Nine were considered to have organic heart disease, five having hypertensive heart disease (one with congestive failure), and four coronary disease, one of the latter having bundle branch block. In three cases auricular fibrillation was found. The leading symptoms in six cases were attacks of palpitation. One of these patients had treatment for paroxysmal tachycardia.

Breathlessness was the chief complaint in three cases. One woman "knew there was something seriously wrong with her heart", and another suffered from fainting attacks and irregular heart beats.

The following two case histories briefly illustrate some of the points mentioned.

The Cardiac Mask without Organic Heart Disease.

A man, aged forty-five years, complained of shortness of breath of twelve months' duration. In the last few weeks this had become more pronounced, so that at the time he was referred to me he had some dyspnœa even at rest, and he required to be propped up at night. He complained of some discomfort in his chest and of attacks of palpitation, and he had lost weight.

He looked ill. His heart was not enlarged. There was a systolic murmur at the apex. The systolic blood pressure was 180 millimetres of mercury and the diastolic 80. The peripheral vessels were soft. The pulse rate was 90 per minute, falling to 80 at rest, and the beats were short and sudden, with a "collapsing" quality. The thyreoid gland was a little enlarged, and there were a slight stare and a faint tremor of the hands. The patient's skin was cool but clammy. An electrocardiograph revealed splitting of the *Q R S* complexes in the third and fourth leads, left axis deviation, and a flat *T* wave on the third lead. In a teleradiogram the transverse diameter of the heart measured 12·3 centimetres, the cardio-thoracic ratio being 46%. The lungs were normal. The basal metabolic rate was +24% to +30%.

The Cardiac Mask with Organic Heart Disease.

A woman, aged fifty-five years, complained of severe attacks of pain beginning in the centre of her chest and radiating to her arms, and accompanied by a choking sensation. The attacks were related to the least effort and were relieved only by rest and trinitrin. She had a little palpitation, but had lost no weight, and she said that she was not nervous and did not object to hot weather. There was a family history of heart disease.

Moderate cardiac enlargement was found on examination. Tachycardia was present, the heart rate being 114 to the minute. No murmurs were heard. Her systolic blood pressure was 185 and her diastolic 100 millimetres of mercury. The thyreoid was slightly enlarged, a nodule

being palpable in the isthmus; this was not visible on inspection. No eye signs could be detected, but the patient was a little tremulous and her palms were a trifle damp. There were no signs of cardiac failure. An electrocardiograph revealed left bundle branch block. Her basal metabolic rate was estimated at +44%.

This was obviously a case of *angina pectoris* with coronary arteriosclerosis, and the degree of the patient's disability was such as to make her almost a chronic invalid. The extent to which the thyreotoxicosis had aggravated her angina was well demonstrated, for now, after operation, she is able to carry out her ordinary duties in comfort.

The Gastro-Intestinal Mask.

The symptoms comprising the gastro-intestinal mask suggest malignant disease or some other less serious lesion of the gastro-intestinal tract. The complaints include abdominal pain, nausea, loss of appetite, attacks of diarrhœa and sometimes vomiting. The pain may simulate that caused by peptic ulcer in its periodicity and in its relation to food. Vague pain with loss of weight and appetite may simulate gastric carcinoma, or the colon may be suspected when diarrhœa is present.

Although several patients in the present series complained of indigestion, gastro-intestinal symptoms were predominant in only two.

Thyreotoxicosis Simulating Peptic Ulcer.

A man, aged fifty-five years, complained of indigestion of six months' duration. Recently he had begun to have attacks of intermittent pain in the epigastric area. Sometimes the pain would wake him early in the morning, and it was always worse before meals and was relieved by alkalis and by food. He had had bouts of the same pain with intervals of freedom for three years.

He got some relief by resting and by eating every two hours; but it was obvious that he was losing weight and strength. His pulse rate, though usually in the eighties, was often 90 per minute, even at rest, and he became nervous and tremulous. At this stage his thyreoid was slightly enlarged and his skin warm and a little damp. The systolic blood pressure was 160 and the diastolic 70 millimetres of mercury. No eye signs could be detected. His basal metabolic rate was estimated at +30%.

After operation his indigestion disappeared and he was soon perfectly well.

Thyreotoxicosis Simulating Gastric Carcinoma.

A man, aged sixty-seven years, had felt generally below par for the past year or so, and for eight weeks had been troubled by indigestion. Pains in the upper part of the abdomen occurred soon after eating, and he had taken a dislike to meat and vegetables. He felt weak and had lost a stone in weight in two months. He had no palpitation, was not breathless, and did not feel hot. His symptoms were progressive. He looked ill, and in view of the obvious loss of weight, carcinoma of the stomach was suspected. His hands, however, were shaky and damp and had the "salmon" hue; his eyelids were puffy and a nodule could be felt to rise above the manubrium when he swallowed. His resting pulse rate was 100 per minute and unstable. His heart was not enlarged, but a systolic murmur was present to the left of the sternum. The systolic blood pressure was 185 and the diastolic 100 millimetres of mercury. Examination of the abdomen revealed no abnormality. His basal metabolic rate was calculated at +45%.

Six weeks after operation he reported that he was very well and that all his symptoms had disappeared.

The Psychoneurotic Mask.

Psychoneurosis is becoming more and more of a problem. No doubt most of us can recollect some unfortunate person who has suffered from "nerves" for months, and our horror one day to discover some underlying disease that is curable by physical means. Toxic goitre not uncommonly lurks behind a mask of apparently functional symptoms. On the other hand, anxiety states often simulate thyreotoxicosis.[10] The sympathetic system is over-active in both conditions. Possibly hyperthyreoidism is sometimes present in certain types of psychoneurosis and is of secondary importance. Four of the 27 patients in Group IV complained of symptoms of psychoneurotic type.

A married woman, aged thirty-two years, had given birth to stillborn twins a year previously. She had become very nervous since then and complained of various phobias. Small things upset her, and she was emotional, weak and shaky. She had palpitation and throbbing in her throat, her eyes ached, and her sleep was disturbed. She also complained of various vague pains about her body and limbs.

Examination revealed slight puffiness of the upper eyelids and a pulse rate varying from 75 to 90 beats to the minute. Her heart was not enlarged. A soft systolic murmur was heard over the apex. Occasional bursts of premature beats occurred. The systolic blood pressure was 160 and the diastolic 100 millimetres of mercury. She had a slight tremor and clammy hands. The thyreoid gland was palpable. An electrocardiogram revealed no abnormality, and her basal metabolic rate was +31%. Eighteen months after operation she said that she felt very well and had no symptoms.

The Mental Mask.

Only two patients appear in the group of those with mental symptoms. There is no characteristic thyreoid psychosis. When a true psychosis develops in a thyreotoxic patient a psychotic predisposition may be assumed.[11] Mania, melancholia and other mental symptoms have been reported, and some patients hover on the borderline between severe psychoneurosis and psychosis.

I do not know whether mental disease precipitates toxic goitre or whether the latter is ever responsible for a psychosis. Stoddart[11] contended that toxic goitre is invariably a type of anxiety neurosis dependent on psychic factors. Certainly in the psychoneurotic types great emotional stress often seems to figure largely in the history. Acute delirium and mania both appear definitely to be due to thyreoid crises; but when mental symptoms have been prolonged and there is a family history of psychosis I had thought that the removal of the thyreoid might precipitate a total mental breakdown. Sir Alan Newton[4] stated that four patients with severe psychosis on whom he operated for toxic goitre did not improve in regard to their mental states.

The following case was not one of severe psychosis, and the patient made at least a temporary recovery.

A married woman, aged thirty-one years, had always been excitable, and had had periods in which she became mentally unstable. There was a family history of mental illness. Eighteen months previously she had become worse, with severe depression alternating with bouts of hypomania. She had some abnormal phobias regarding sex. A goitre had been noticeable for seven years. She had lost weight and complained of palpitation and giddiness.

The same type of mental symptoms had occurred previously, but after a pelvic operation they had quickly cleared up. Examination revealed a very excitable woman, whose conversation was almost incoherent. She was well nourished, but tremulous, with clammy hands. The pulse was regular, the rate being 120 per minute, with occasional drops to 100. The heart was over-acting, but was not enlarged. The systolic blood pressure was 160 and the diastolic 90 millimetres of mercury. There were no eye signs. A large irregular goitre was present. Her basal metabolic rate was estimated on three successive days, the lowest figure being +40%.

In view of her history it was decided to postpone operation and keep her under observation. This proved to be mistaken advice, for some months later I heard from a colleague that her symptoms had become acute and that she had been operated on with success. A year later she said she felt well, was doing her own household duties, and had gained 45·8 kilograms (seven stone three pounds) in weight. The future appears to depend on whether her psychosis was of the cyclothymic variety or not.

The Diabetic Mask.

Glycosuria has been estimated to occur in 10% of patients suffering from thyreotoxicosis. In several of the cases in this series it was found, but in four it was significant, and when it was considered in conjunction with the symptoms *diabetes mellitus* was simulated very closely.

The complaints were of loss of weight and strength, thirst and polyuria. Benedict's test applied to the urine on every occasion yielded a heavy red deposit. True *diabetes mellitus* is occasionally found in conjunction with toxic goitre. The urine of three of the four patients has remained sugar-free, although they have received a full diet since operation; but in the following case there was a recurrence of glycosuria a year later.

A man, aged fifty-seven years, had been told that he had diabetes, and had been dieted for some time without success. He had refused insulin treatment and later had become careless about his diet. When I saw him four years later he had lost a great deal of weight and he complained of weakness, thirst and frequency of micturition. His urine was loaded with sugar. His venous blood sugar content, estimated three hours after a normal breakfast, was 300 milligrammes per 100 cubic centimetres of blood. He was given a restricted carbohydrate diet for ten days, when examination of specimens of urine taken before and after each meal revealed great improvement, and two of the six specimens of urine were sugar-free. He had lost two pounds in weight during that time, and his pulse rate was 90 per minute. His heart was normal in size. The systolic blood pressure was 160 and the diastolic 100 millimetres of mercury. A soft nodule was palpable in the thyreoid gland, and a slight tremor of the hands, which were a little damp, was noted. No eye signs could be detected. His symptoms became more pronounced and his basal metabolic rate was estimated at +50%.

Six weeks after operation he had gained 13·7 kilograms (two stone) in weight, and though he was receiving a full diet his urine was sugar-free; but a year later, although he was in good health, glycosuria was again present.

Before concluding these remarks on the symptomatology of masked types I must mention one other not uncommon complaint, and that is pain in the legs. This pain, referred to by patients as rheumatism, was an outstanding complaint of quite a number of people in the later age periods. It appeared to be vague but troublesome; it was not located in the joints, but rather in the muscles and bones, and was unrelated to exercise and not relieved by rest. Muscular fatigue is a well-known symptom in toxic goitre and might lead to some aching in the legs, but should pass off with rest. I wonder whether the pain referred to has any ætiological connexion with osteoporosis? It is known that there is pronounced calcium loss in about 50% of these cases[11] and that osteoporosis can be confirmed by radiographic examination of the bones. I have not had an opportunity of investigating the possibility of the relationship between osteoporosis and pains in the legs.

The symptoms of toxic goitre may thus point to almost any organ of the body. The seed is the same in all no doubt, but how vastly different the soil!

Signs of Thyreotoxicosis.

The signs relating to the heart and circulation have already been discussed. Any one or more of the classical signs may be absent.

With regard to the thyreoid gland itself, a small nodule, with or without enlargement of the gland, is perhaps the most common finding. In some cases it is quite small and has to be searched for. Rarely, the thyreoid may appear normal.

Tachycardia is nearly always present, but is sometimes of quite mild degree, especially in people past middle life. Occasionally the pulse rate is normal, particularly if the patient is resting. It is, however, usually unstable, and any emotional upset or mild exercise tends to increase the rate unduly.

Tremor appears fairly constantly, and may be of the typical fine variety or coarse.

The palms are usually a little damp. The peculiar salmon colour of the skin, most noticeable on the dorsum of the hands, and usually attributed by the patient to sunburn, is characteristic, but is often absent.

Of the eye signs, exophthalmos, especially in older people, is seldom met with. Occasionally it may be unilateral. A puffiness of the lids may be noticed, but the commonest of the eye signs is a slight elevation of the upper lids, giving the appearance of a stare, which is more noticeable if the natural blinking is decreased. Quite often the eyes appear normal.

The skin is sometimes flushed and warm, and patients may dislike hot days and feel better in the winter; but this information is seldom volunteered. The sensation of excessive heat is the basis of Hay's amusing "eiderdown test".[6]

Certain combinations of symptoms and signs are suggestive, for example: loss of weight with good appetite; tachycardia and hypertension with high pulse pressure, and attacks of auricular fibrillation without obvious cause; transient glycosuria, with weakness and shakiness; a restless, jerky, alert manner, with undue optimism almost amounting to euphoria, in a person obviously ill.

The history of the onset of the illness is usually not helpful, as it may be slow and insidious or rapid, often following an acute illness, an accident or a period of mental stress.

Aids to Diagnosis.

Toxic goitre cannot be diagnosed in the laboratory, but certain tests are useful in confirmation of the clinical diagnosis. Of these, the estimation of the basal metabolic rate offers the most help. The basal metabolic rate test is not infallible, because of three factors: firstly, the difficulty of conducting the test under true basal conditions; secondly, the wide range of values obtained in nervous patients not suffering from toxic goitre; and thirdly, ignorance of the normal basal metabolic rate for any individual. If the test is repeated and every care exercised, it is undoubtedly of very great value, and the rate is found to be raised in nearly every case. The figure obtained, however, is not a true index of the degree of toxæmia. Other factors causing an increased metabolism must also be kept in mind, notably congestive heart failure and raised body temperature. The result of the test must be considered in strict relationship to the clinical findings, and if they agree the diagnosis is confirmed.

Electrocardiography is of no help in the diagnosis, but it is useful in defining the type of arrhythmia present (auricular fibrillation not always being obvious when the pulse rate is high) and in giving information with regard to the state of the heart muscle or pointing to the possibility of coronary disease, and so on.

Radiography is helpful in confirming the size of the heart, and sometimes in indicating the presence of a substernal thyreoid which can be only suspected clinically.

The "ham-shaped heart", described by Parkinson, is seen only in cases of long standing, and even then not invariably. The left border becomes straight, as in mitral stenosis; this is due to dilatation of the pulmonary arc, and is usually accompanied by some enlargement of the left ventricle. According to Gotta[8] the former changes are constitutional and not due to thyreoid disease.

When typical over-action of the heart is present, this is well seen through the fluorescent screen.

The therapeutic iodine test is useful in a doubtful case, especially when used in conjunction with a test of the basal metabolic rate. The latter is first estimated and the patient is then instructed to take 0·6 cubic centimetre (10 minims) of Lugol's solution three times a day for ten days, when the basal metabolic rate is retested. If this is lower, and if the clinical condition is improved, the diagnosis of thyreotoxicosis is confirmed. The test should be made with the cooperation of a surgeon; otherwise the giving of iodine would incur his righteous wrath.

Other tests have been devised, including the electrical impedance angle test, Goetsch's adrenaline test,[13] McCarrison's quinine tolerance test, Bartlett's breath-holding test, estimation of the level of cholesterol and creatine in the blood, and the measurement of the velocity of the blood. None of these tests is diagnostic, but each may sometimes be useful.

In conclusion I would suggest that there is only one type of heart disease, apart from the neurogenic, psychogenic and nutritional types, which can be completely cured, and that is thyreotoxic heart disease; and that there is only one man who can effect the cure, and that man is the surgeon. The physician's role should be ever to bear in mind the possibility of a thyreotoxic element in every case of heart disease.

Summary.

In a series of 80 patients suffering from thyreotoxicosis seen in private practice, it was found that 23 could be described as suffering from a classical type; 22 as suffering from mild thyreotoxicosis (hyperthyreoidism); 8 as suffering from "residual" thyreotoxicosis—that is, having residual symptoms, either post-operative or remaining after the disease appeared to have burned itself out; and 27 as suffering from the masked type.

The diagnosis of the masked type is discussed. Of the 27 patients, the illness of 15 had the cardiac mask, of four the psychoneurotic mask, of four the diabetic mask, of two the gastro-intestinal mask, and of two the mental mask.

The masked types occurred in the middle-aged and elderly, and the importance and difficulties in diagnosis of the disorder of patients with the cardiac mask, both with and without organic heart disease, are stressed.

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THE TREATMENT OF CERTAIN TYPES OF UTERINE HÆMORRHAGE.

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IN all cases of uterine hæmorrhage a thorough general examination is necessary. In about 10% of the cases with which I come in contact some cause can be found for the hæmorrhage outside the pelvic organs. A high systolic blood pressure (above 200 millimetres of mercury) is perhaps the most common abnormal finding in this type of case. The hæmor-

rhage is easily stopped by irradiation or by surgery; but the result is never satisfactory and is often disastrous.

Patients with poor urinary function sometimes suffer from uterine hæmorrhage. If they are given irradiation and the underlying cause is not recognized they become uræmic within a very short period. Surgical measures cause equally bad results. Patients suffering from pernicious anæmia or even leuchæmia are sometimes brought for treatment. The only difficulty in some of these cases is diagnosis. The making of blood films may have to be repeated, for a diagnosis to be made from the severe types of secondary anæmia sometimes found after repeated and severe uterine hæmorrhage. In almost all these cases the treatment is that of the patient's general condition, not of the local disorder. However, a carcinoma can occur in a patient with high blood pressure or poor urinary function.

Hæmorrhage usually produces some dilatation of the cervix. It is therefore possible to introduce a curette into the uterus of a patient in the Sims's position without any anæsthetic and obtain a specimen for histological examination.

A small sharp curette and a vaginal speculum are the only instruments required for this simple procedure, and a definite diagnosis can often be made with very little disturbance of the patient, who is often in poor condition to be given an anæsthetic.

Curettage is not the best method of making a diagnosis; a submucous myoma or a polypus (mucous or placental) can often be missed. Endoscopic examination of the uterine cavity is a much more satisfactory procedure. I have always used a fourteen millimetre endoscopic tube and a focusing headlight. Firm packing with an alligator forceps will check hæmorrhage for long enough to provide a good view of the interior of the uterine cavity. Sometimes it is necessary to pack the uterus more than once when bleeding is profuse. The sides of the cavity can be inspected by lateral movements of the handle of the endoscope. Endoscopic examination will often show the extent and position of a carcinoma of the uterine body and will sometimes reveal a malignant growth which the curette has missed on account of its small size. A submucous myoma or polypus seen in this way can often be removed through the cervix, but may require an anterior hysterotomy. This is a simple but much neglected operation, which gives an excellent result with little risk or discomfort to the patient. Hysterectomy is quite unjustifiable in most of these cases.

It is not uncommon for young girls at puberty to have one or more fairly severe hæmorrhages with their first menstrual period or early in their menstrual life. Careful investigation of these patients is necessary, and a fourteen millimetre endoscopic tube can be used instead of a vaginal speculum to avoid damage. Most of these patients have no further trouble and require no treatment. In the cases in which the hæmorrhage persists and treatment is necessary, treatment with radium always gives a good result. A dosage of about 800 milligramme-hours (50 milligrammes for 16 hours) is sufficient. The radium should be shielded by 1·8 millimetres of platinum and rubber covered. An endoscope is useful for introduction, and great care should be used in dilatation, as a lacerated cervix is an accident to be avoided. These patients have amenorrhœa for about fifteen months, and then resume normal menstrual life. I have not seen any patients with permanent amenorrhœa; but the patient's relatives should be warned of the possibility.

The treatment of uterine hæmorrhage in the middle period of a woman's menstrual life is usually best treated surgically. Irradiation often gives unsatisfactory results. In many cases uterine hæmorrhage is associated with chronic inflammation. Repair of the cervix, followed by a course of diathermy, cures some patients; but many require hysterectomy. For these the vaginal hysterectomy has many advantages over the abdominal operation. Irradiation is sometimes necessary when there are contra-indications to surgery. Subsequent operation is not rendered more difficult in the unsuccessful cases, provided that the dosage is correct and the screenage adequate. These are the cases in which sometimes a persistent and annoying discharge develops. The arrest of hæmorrhage, even if not very lasting, often gives time for the patient to get into much better condition to undergo the subsequent operation.

There are, however, a large number of women who approaching the menopause have one or more severe hæmorrhages, in whom no abnormal condition local or general can be found, and in whom the disorder is generally considered to be due to some endocrine disturbance. All of these require examination, but many require no treatment. I have recently written to 43 of these patients who had an endoscopic examination, no abnormal condition being found. Twenty-nine are still well and have had no further trouble. Six required treatment: five had been given irradiation treatment by me, and one was operated upon at another hospital. Eight were lost or did not reply. Even if the last group is considered to be made up of failures, nearly 70% of the patients were cured without treatment. This makes the results of treatment by glandular products look rather ridiculous, since they are never checked by comparison with the results in cases in which no treatment is undertaken.

In cases of uterine hæmorrhage in women at or near the menopause who require treatment, who have no other disease condition, local or general, and in whom the uterus is not much enlarged, irradiation gives almost 100% of success. There is not only no return of hæmorrhage, but there is no vaginal discharge or other disability. To get these results it is necessary to give a dose just above 2,000 milligramme-hours. The radium (or radon) must be shielded by at least 1·8 milligrammes of platinum and rubber.

Conclusions.

1. All patients with uterine hæmorrhage require careful investigation, but not all require treatment. In some cases treatment is to be avoided.

2. Radium, though it may be used at any time, is most useful at the beginning and end of menstrual life.

3. It seems that hysterectomy is performed too often.

THE SEROLOGICAL TYPES OF STREPTOCOCCI ASSOCIATED WITH SCARLET FEVER IN ADELAIDE.

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AND

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RECENTLY surveys have been made of the types of streptococci associated with scarlet fever in Sydney[1] and Melbourne.[2] During the period September 23, 1938, to February 10, 1939, we have typed, by Griffith's method, the streptococci isolated from throat swabs of patients with scarlet fever admitted to the Infectious Diseases Hospital, Northfield, Adelaide.

Methods of Typing.

Throat swabs were taken on the morning after admission to hospital from all patients admitted to the Infectious Diseases Hospital, Northfield, South Australia, with a diagnosis of scarlet fever. Blood agar slopes were inoculated from these swabs and despatched the same day, without incubation, to the Commonwealth Serum Laboratories, Melbourne. When they were received, some thirty hours later, the surface of a slope was scraped with a platinum loop which was rubbed in a few drops of broth, of which a drop was plated on neopeptone blood agar. After overnight incubation, the plates were examined under a plate microscope for colonies of β-hæmolytic streptococci, and a single colony was picked off into tryptic broth for typing. By this method hæmolytic streptococci were isolated from 80 of 91 swabs from patients with scarlet fever. This result is not notably inferior to that obtained by direct plating of swabs.

The sera employed and the method of typing have been recently described.[3]

Results.

The seventy-eight strains of hæmolytic streptococci of group *A* (Lancefield) were typed as follows:

Wade	55
XI	7
IV	1
X	2
XII	1
XVII	2
Gerrard	3
Woodbury	1
Untyped	6

Type "Wade" was associated with the great majority of cases. This is a type, not included in Griffith's series, first identified in Sydney by White *et alii*.[1] It was present in about 10% of the cases of scarlet fever in Melbourne in the period April to September, 1938. Dr. Helen Kelsey informs us that it has been found in about the same frequency since then. It was found in about 5% of cases examined in Sydney in 1936 and 1938. This type, therefore, is responsible for relatively few cases in Melbourne and Sydney. The number of admissions of scarlet fever patients to the Infectious Diseases Hospital, Northfield, during the period of our observations, was above the average. During the period from September 23, 1937, to February 10, 1938, there were 35 scarlet fever admissions, as compared with 91 admissions in the corresponding months September 23, 1938, to February 10, 1939. The almost threefold increase in the admissions suggests that an epidemic of scarlet fever was in progress in the later period. This conclusion is supported by the fact that of the 91 admissions in this later period no less than 55 were due to infection by a single type of streptococcus, type "Wade". Since the excess of 56 cases in the period of our observations corresponds so closely with the actual number (55) of type "Wade" infections, it seems not unlikely that the increase in the case incidence in the 1938-1939 period was due to the epidemic prevalence of type "Wade" in Adelaide.

Clinically it was remarked that the cases admitted in the period under observation were more severe and, in particular, were associated with a higher incidence of cervical adenitis than had been noted during 1937. Excluding cases from which no group *A* streptococcus was isolated, early cervical adenitis was present in 24 of 55 cases of "Wade" infections, in 3 of 7 cases of type XI infections, and in 1 case out of 16 due to other or unidentified types of streptococci. The difference between the incidence in the "Wade" cases and in those due to all other types combined is statistically significant, confirming the clinical impression. H. Neisser,[3] reporting the relationship of the common English types to clinical manifestations, found early cervical adenitis as a complication in 19 of 43 type I infections (44%), in 5 of 24 type II infections (21%), and in 1 of 13 type IV infections (8%). While too much stress cannot be laid on a comparison of the incidence of clinical symptoms in different hospitals and different countries, there is the same high incidence in the English type I cases and the Adelaide "Wade" cases. In a milk-borne epidemic in Sweden due to type III, recently reported by Henningsen and Ernst,[4] cervical adenitis was a feature in 26 (20%) of 128 cases. On the whole, therefore, the incidence of cervical adenitis in the Adelaide "Wade" cases seems above the average.

Type "Wade" is a non-capsulated strain. White *et alii*[1] believe that capsulated strains have a greater tendency to spread and cause scarlet fever in a community than non-capsulated organisms. Their chief evidence is a higher familial incidence of infections with capsulated as compared with non-capsulated strains (16% as compared with 3·5% in Sydney). There were five familial infections in our series, of which three were associated with type "Wade", one with type XI, and one with an unidentified non-capsulated strain. This incidence of familial infections (6%) is close to that found by White *et alii* for non-capsulated strains. The numbers involved are, however, too small to have much significance.

Discussion.

These findings from Adelaide, in conjunction with those already reported from Sydney and Melbourne, show that the distribution of the types of streptococci associated with scarlet fever varies in each of the three cities. Type II, one of the two predominant strains in Melbourne, was not found in Adelaide, and Professor H. K. Ward informs us that it has not yet been found in Sydney. Type "Wade", easily the most important type in Adelaide, has been of comparatively minor importance in Sydney and Melbourne. Types I and XI, which have at various times predominated in Sydney, are rarely found in Melbourne. It will be interesting to see whether type II will eventually appear in Sydney or Adelaide. The epidemiological picture seems less complicated in the Australian capitals than in such cities as London and New York, and continued study of the spread of scarlet fever, under Australian conditions, is obviously desirable.

Further investigation in the fever hospitals would be required to determine whether there is a definite linkage between the serological type of the streptococcus and the severity of the symptoms. This possibility was suggested by Gunn and Griffith[5] (1929), who provided supporting evidence. Combined clinical and laboratory study of a large series of cases due to various types would be necessary to establish differences in virulence, if any, between the types commonly found in Australia. The Adelaide findings tend to confirm the previous impression[2] that, in a large city, cases of scarlet fever due to the predominant epidemic strains are more severe than sporadic cases caused by the endemic strains.

Summary.[1]

1. Of 78 streptococci isolated from patients with scarlet fever in Adelaide, from September, 1938, to February, 1939, 55 were type "Wade", 17 belonged to other serological types, and six could not be typed.

2. The results of the investigation are briefly discussed and contrasted with recent reports from Sydney and Melbourne.

Acknowledgement.

We are indebted to Dr. A. H. Finger, Medical Superintendent of the Infectious Diseases Hospital, Northfield, South Australia, for permission to conduct this investigation and for access to the clinical records of the patients.

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ELECTROMETROGRAPHY: A PRELIMINARY REPORT.

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SINCE the middle of the last century many attempts have been made to study quantitatively the phenomena of uterine contraction. Estimations of the force exerted by the uterus during labour vary from the crude figures of Duncan (1868), who measured the head of water pressure required to rupture fresh fœtal membranes,[1] to accurate measurements by some form of internal hysterography of the changes in intrauterine tension which occur during labour. Internal hysterography, first used by Schatz[2] in 1872, and since then by many workers, including Rucker,[3] Bourne and Burn[4] and Chassar Moir,[5] provides permanent records of the force and nature of the uterine contractions by means of a recording manometer connected to a small balloon placed in the uterine cavity. Although this method has added considerably to our knowledge of uterine activity, it has several obvious disadvantages, chief of which is the risk of infection incurred by the introduction of a foreign body into the uterus. Because of this risk, other methods of hysterography have been devised which do not require intrauterine manipulations. In 1932 Dodek[6] described a simple method of external hysterography, which depends upon the fact that the uterus delivers a forward thrust to the abdominal wall with each contraction. This thrust can be made to increase the pressure inside a closed air system, which includes a sensitive tambour supporting a writing point. The excursions of the pen are only roughly proportional to the force of the contractions, but this drawback is outweighed by the simplicity and safety of the method. It has therefore been widely used in the study of the action of drugs on the uterus.

But mechanical movement is not the only form of energy liberated by a contracting muscle. As is well known, heat and electrical energy are also produced, and the latter gives rise to waves of potential which may be picked up from the body surface and recorded by a sensitive galvanometer. Hence the electrocardiogram, to take a familiar example. It is not so well known, however, that the contracting uterus produces considerable electrical disturbances, which may be led off by suitable electrodes and detected by some form of galvanometer. This provides a quantitative method of studying uterine activity totally different from the other forms of hysterography, and one which has so far been largely neglected. In fact, a review of the literature shows that the study of uterine electrograms, even in laboratory animals, has received very scanty attention. Theilhaber[7] appears to have been the first investigator to record action currents from the uterus. In the human subject, *post partum*, he placed one electrode in

the cervix and one in the rectum near the fundus. Using a string galvanometer, he obtained curves which appear to represent potential waves of uterine origin. He coined the term *Elektrometrogramm* to represent this type of record, a term which is preferable to the clumsier alternatives, used by some authors, of "electrouterogram" and "electrohysterogram".

The next worker interested in the subject was Veit,[8] who recorded the uterine electrical waves accompanying labour pains, leading off the potentials with electrodes attached to the feet. He also tried electrodes in other positions, but stated that interference from the electrocardiogram obliterated the uterine waves. In 1913 Blumenfeldt and Dahlmann[9] confirmed Theilhaber's results in the human subject and carried out some work on the uterine electrograms of various animals. They noticed that the electrical waves preceded the mechanical movements by a fraction of a second. No further work on uterine electrical activity seems to have been done until 1928, when Greene[10] recorded the mechanical and electrical responses of the excised automatically contracting uterus of the rat. He observed small rapid potential waves superimposed on slow large deflections. Hasama[11] made similar studies on the rabbit uterus *in situ*, and obtained fairly regular diphasic electrical curves at the rate of from three to seven per minute.

In 1931 Bode[12] published electrometrograms from human subjects, taken during the first stage of labour. He used needle electrodes inserted under the skin of the abdominal wall. Clason[13] has published a report of similar work, but his attempts were only partially successful. Falk and Nahon,[14] using a special intrauterine electrode, have recorded electrical curves from non-pregnant human uteri in the mid-period of the menstrual cycle. Since their paper no further reports have appeared of work on human uterine electrograms. Bozler,[15] however, has just published an account of his investigations into the electrical activity of uterine strips from various animals, using valve amplification and a cathode-ray oscillograph to detect the action potentials. This appears to be the first time that any instrument better than the string galvanometer has been employed in the study of uterine potentials.

FIGURE I.
Record of electrical variations during uterine contraction in a parturient rhesus monkey. (Bilumbar electrodes.)

In this laboratory interest in the subject was first stimulated when, with a string galvanometer connected to ordinary electrocardiograph electrodes placed on the abdominal wall, it was found possible to record curves of uterine electrical activity in a parturient rhesus monkey. Each contraction of the uterus was accompanied by complex rhythmic waves superimposed on a slow large deflection; during relaxation the string returned to the baseline and remained quiescent until the next contraction began (Figures I and II). It was easy to distinguish the true uterine waves from slight disturbances caused by respiratory movements and the electrocardiogram. The ease with which these records were obtained encouraged the hope that a satisfactory technique might be found for electrometrography in the human subject. Preliminary observations have been made on a few women in late

FIGURE II.
Record from the same animal, showing quiescence of the string between contractions of the uterus.

pregnancy, the results of which suggest that even the slight painless contractions present during that time produce small waves of potential capable of being picked up from the body surface. However, before serious attempts can be made to study the clinical side of this subject it is essential to have a clearer understanding of the fundamental bio-electric phenomena associated with uterine contraction. With this end in view a number of observations have been made on the uterus of the cat *post partum*. Electrodes were placed directly on the exposed organ, and simultaneous pressure records were made with an optically recording membrane manometer connected to a small intra-uterine balloon. The records obtained in this way show, firstly, that each contraction is accompanied by considerable electrical variations, and secondly, that the onset of electrical activity just precedes the mechanical changes. The electrogram consists of rhythmic, diphasic waves occurring at the rate of one every one to three seconds (Figure III). These oscillations continue throughout the contraction phase, but disappear as relaxation sets in, no further waves appearing until just before the next contraction (Figure IV). Each rhythmic oscillation appears to represent the passage along the uterus of a wave of excitation; in the records being described some twelve to fifteen such waves occur during each contraction phase. The rhythmic waves are often quite complex owing to a number of smaller deflections (frequency six to ten per second) superimposed on them. Although successive waves show minor variations in form, they tend to conform to a constant pattern, so that very often a series of rhythmic waves are almost identical in shape. This fact strongly suggests a common origin or "pacemaker" for the excitation waves, which would appear to sweep in succession over almost the same pathway in the uterine muscle. This interpretation of the electrograms agrees with the widely held view that pacemakers exist near the tubo-uterine junctions,[16] and lends support to the belief of Hofbauer[17] that there is in the uterus a special conducting system analogous to the Purkinje system of the heart.

FIGURE III.

Electrogram taken directly from the right uterine horn of a cat twenty-four hours after parturition, with simultaneous record of intrauterine pressure (upper curve). Complex rhythmic potential waves are seen accompanying the incremental phase of contraction.

It is obvious that much experimental work must be done before the significance of uterine electrical activity can be fully understood. The observations already made in this laboratory have been necessarily limited and serve merely to indicate the extent of this field of investigation. A more detailed study of the uterine action potentials will shortly be undertaken in this department by means of more sensitive apparatus than before, namely, valve amplification and a cathode-ray oscillograph. Attempts will also be made to devise a satisfactory technique for recording human uterine electrograms. If the technical difficulties can be overcome, the electrometrogram may prove to be a useful clinical means of studying disorders of uterine contraction.

FIGURE IV.

Record from the same animal, showing the almost complete cessation of electrical activity during relaxation. The time-marker indicates seconds in all records.

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Reports of Cases.

PATHOLOGICAL REPORTS FROM THE CHILDREN'S HOSPITAL, MELBOURNE.

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XX. TUBERCULOSIS FOLLOWING CIRCUMCISION.

TUBERCULOUS INFECTION by inoculation of a circumcision wound was apparently undreamed of in the philosophy of William Boyd when he wrote that in man, as distinguished from the laboratory animal, inoculation need not be considered as a mode of tuberculous infection, save for those unfortunate enough to follow such hazardous occupations as cleaners of sputum cups, butchers and pathologists. At the time of the death of an infant who contracted tuberculosis in the manner indicated, the clinical and pathological details concerning whom I propose to recount, a search of the medical literature by M. S. Reuben[a] revealed 42 recorded cases of tuberculosis following circumcision. The instance which came under my notice, however, differed in one very important particular from the 42 examples collected and analysed by Reuben. In that author's series the babies were without exception Jewish children who had undergone ritual circumcision, whereas the parents of this child, as shown by the register of in-patients of the Children's Hospital, Melbourne, were adherents of the Church of England.

Gordon W. was aged six months when admitted to the Children's Hospital on July 31, 1919. He then displayed a dry, crumbling necrosis of the penis. His clinical notes record that he was circumcised at the age of twelve days. Five weeks later small "yellow spots" appeared in the circumcision scar, which in the time that had elapsed since the operation appeared to have healed soundly. The initial lesions progressed to a stage at which they broke down with the liberation of dry cheesy material, and subsequent spread of the process involved the *glans penis* and the skin covering the corpora. When the baby was brought to hospital bilateral inguinal adenitis was an obvious clinical feature; the swellings in the groin had been noted by the mother, who stated that they had been present for several weeks. She had never had to resort to artificial feeding for the baby, was herself well, and had one other child, in good health.

The clinical notes relating to this patient are rather meagre. He remained in hospital for three months, a period during which the inguinal swellings were incised and necrosis of the penis progressed. The laboratory record of pathological specimens examined has no entry relating to specimens of pus or tissue from the inguinal swellings in this child, and it is to be presumed, therefore, that no such material was sent for examination.

If allowance is made for the reconstruction necessary so that it may be presented as a connected account rather than in annotated form, the following is a transcription of my autopsy record of November 5, 1919. The body was that of a very poorly nourished marasmic infant. Almost the whole of the penis had sloughed away, the organ having been reduced to a low elevation on the pubes, around which there was no apparent inflammatory reaction. Incisions were present in both inguinal regions, and the inguinal glands were in a softened and necrotic condition.

Within the abdomen was observed a state of general peritonitis which had occasioned the deposition of much fibrinous exudate upon the liver, spleen and coils of intestine. The large quantity of fluid in the peritoneal cavity contained much material of a fæcal nature. The glands of the enteric mesentery were greatly enlarged and many of them were obviously tuberculous. Situated in the terminal portion of the ileum were about a dozen tuberculous ulcers, two of which had perforated; in several other ulcers the excavation had exposed the serous coat of the bowel. Along both iliac vessels was a chain of enlarged, pallid and semi-caseous glands. No miliary tubercles could be detected in the liver, spleen or peritoneum, but an unmistakable miliary sowing was present throughout both lungs. The bronchial glands were examined very carefully and did not exhibit any macroscopic tuberculous changes. Cerebro-spinal fluid was present in great excess, although no actual tuberculous process could be defined in the meninges. The inguinal and retro-peritoneal glands along the iliac vessels were involved in a continuous chain of tuberculous infection, which seemed to indicate the penis as the source.

Subsequent examination of microscopic sections of tissue from the penis and one of the iliac glands confirmed the very strong presumption afforded by the autopsy of a tuberculous infection of the penis. The occurrence is unique in my experience, and information which I have been enabled to gather leads me to think that it will take its place in medical literature as the only recorded instance of tuberculosis following non-ritual circumcision.

As I have already indicated, the subject of inoculation of the wound with *Bacillus tuberculosis* in the procedure of ritual circumcision has been discussed by M. S. Reuben,[a] who reported details of an instance which came to his own notice, and culled the literature for 41 others. The child whose clinical record furnished the basis of Reuben's communication was nine weeks old when he came under observation, having been circumcised by a mohel when eight days old. Five weeks later a swelling appeared in the inguinal glands of the right side. Four small nodular infiltrations were observed in the circumcision scar, and the application of the von Pirquet test resulted in a positive reaction. The sputum

of the mohel, a Jewish official authorized to perform ritual circumcision, was examined and found to contain tubercle bacilli in large numbers.

In his review of 42 cases of tuberculosis supervening on ritual circumcision, Reuben found that the first clinical sign was infiltration in the area of the wound, ulceration generally supervening within fourteen days of the operation. It appeared that in the majority the wound never healed completely. Ulceration might extend to the abdomen, and in one of the recorded cases it culminated in total destruction of the *glans penis*. The inguinal glands became enlarged in from three to eight weeks after the circumcision and eventually softened and broke down. The majority of the infants died before the end of the third year from miliary tuberculosis and tuberculous meningitis. Those who recovered invariably presented manifestations of tuberculosis in later life, notably osseous tuberculosis and tuberculosis of lymphatic glands. Of the 42 children reported as having become victims of tuberculosis as the result of ritual circumcision, 16 died and 11 recovered. No information was forthcoming regarding the ultimate outcome in the remaining 15 cases.

The manner in which tuberculous infection of the wound has been communicated in the course of ritual circumcision is susceptible of easy explanation. It is well known that it has been an age-old practice among Jewish communities that the wound should be sucked at a certain stage in the conduct of the rite. The suction was usually carried out by the mohel. In the 42 cases collected by Reuben he determined that in 37 oral suction of the wound was carried out in the usual way; in three the wound was sprinkled with wine from the mouth of the operator. In the case of the child by whom Reuben's attention was drawn to the subject, the wound was aspirated through a glass tube, and in another instance a dressing, onto which wine from the mouth was poured, was applied to the wound.

In four of the recorded cases of inoculation of a ritual circumcision wound with *Bacillus tuberculosis*, tubercle bacilli have been demonstrated in the sputa of the operators. Twelve of those reported antedate the discovery of the tubercle bacillus, and in such cases the evidence of direct inoculation by the suction procedure rests on the early death of the operator from phthisis or on the occurrence of more than one such calamity in his practice.

In *The Lancet* of fifty-one years ago, F. S. Eve[3] reported the communication of tuberculosis by ritual circumcision. Diagnosis was rendered incontestable by the result attending the injection of the contents of an inguinal abscess into a guinea-pig. This occurrence led Eve to remark that not long previously a "group of cases" had been observed at the London Hospital, in which infants had been infected with syphilis by the procedure followed in ritual circumcision. He considered that syphilitic infection was probably a more common event than the transmission of tuberculosis, and suspected that many instances of both had been overlooked.

I am reliably informed that aspiration of the circumcision wound, orally or by other means, is no longer practised in enlightened Jewish communities.

The foregoing observations, although historically interesting, bear indirectly only on the case of the child Gordon W., my recollection of whom led me to consult the Children's Hospital records of twenty years ago. From the fact that his parents gave their religion as that of the Church of England his case must clearly be regarded as one of tuberculosis following non-ritual circumcision. I have ascertained that the family no longer live at the address at which they were located in 1919, and I have been unable to trace them. Information as to who circumcised the child, his state of health, or any contact between the infant and a phthisical subject is very desirable, and unfortunately the clinical notes are silent on these points. I submit, however, that it is not too imaginative to suggest that some individual with pulmonary tuberculosis must have attended to the baby, and by droplet infection distributed by coughing inoculated the unhealed wound with the tubercle bacillus.

In clinical observation of tuberculosis in general it is not often that the time and manner of inoculation can be marked with such precision as in the occurrence of tuberculous infection of a circumcision wound. Such a circumstance furnishes a parallel with syphilis, and a striking resemblance between tuberculosis contracted in the manner under discussion and acquired syphilis is at once apparent. In both there is a local granuloma, which is followed at approximately the same time interval by clinical evidence of implication of the inguinal glands. Can the similarity be carried further, with a suggestion that the rapid generalization of the syphilitic infection also is paralleled by that of the tuberculous infection? A good case might be made out for an analogy between syphilis and tuberculosis, in respect of a rapid, almost immediate, systemic dispersion of the causal micro-organisms. Although syphilis has always been regarded as essentially a systemic infection, the tendency has been to consider tuberculosis as eminently focal, many minds being unable to conceive of disseminated tuberculosis in any other than its extreme clinical form, miliary tuberculosis.

The case of a new-born infant who sustains a wound infection with *Bacillus tuberculosis* provides the closest approximation to the laboratory animal that it is possible to imagine. Careful study of tuberculosis induced in guinea-pigs by subcutaneous inoculation has resulted in observations which indicate that, in addition to the orderly step-like progression of infection from the inoculation focus to the immediately related lymph glands, thence to the next proximal group of glands, and so on, there is an almost immediate carriage of some bacilli to points at a distance from the place of entry, and if the infecting microorganisms are numerous, to diverse destinations in widely separated tissues.

In a notable address on the spread of tuberculous infection in the body, A. K. Krause[4] indicated the experimental evidence on which these statements are based. Krause studied systematically the manner and rate of distribution of living virulent tubercle bacilli in the bodies of guinea-pigs which had received a single subcutaneous inoculation. He found that dispersion of bacilli was amazingly rapid; long before the local granuloma became evident, living bacilli were recoverable from almost any of the animal's tissues. By the inoculation of various tissues into other guinea-pigs it was proved that tubercle bacilli had traversed the body and located themselves in many organs within four days or less. Such fixation took place weeks before visible changes appeared in such organs. Further observations on the part of A. K. Krause and his associate, H. S. Willis, relative to the rate of mobilization of living tubercle bacilli within the first few days after their inoculation into guinea-pigs, will be found in the address[5] to which I have referred.

If ever it were safe to argue from the laboratory animal to the human subject, it would seem to be so in the consideration of infants to whom tuberculosis has been communicated through a circumcision wound. If the same sequence of events ensued as that determined by Krause in the case of the guinea-pig inoculated subcutaneously with living tubercle bacilli, there should be an almost immediate circulatory dispersion of tubercle bacilli with the establishment of foci of infection at numerous and widely scattered points throughout the body. Many such foci might never become clinically appreciable; but there would be a serious risk of one or more awakening after the patient's apparent recovery from the lesion of primary infection. Hence, as Reuben[1] noted, infants who survived the immediate effects of tuberculous infection of a circumcision wound would be prone to develop tuberculosis of joints or lymphatic glands within a few years.

In the case of the child Gordon W., to record which is the primary object of this communication, it would seem that many of the initially disseminated bacilli settled in the lymphoid tissue of the intestine. It will be recollected that the autopsy disclosed numerous tuberculous ulcers in the terminal portion of the ileum; two such ulcers had perforated and others had progressed to deep excavation. No lesions were apparent which could have induced intestinal tuberculosis in what is generally considered to be

the usual manner, a "feeding" of the intestinal mucosa with highly infective material, such as phthisical sputum.

The precise pathogenesis of tuberculous ulceration of the intestine is still a subject of discussion. Some workers, notably Calmette[4] and Le Noble,[5] have attributed the initiation of the lesions to small infarctions of the bowel wall induced by hæmatogenous bacillary emboli. An enterogenous rather than a hæmatogenous origin is, however, more generally favoured, particularly when massive doses of bacilli are swallowed.

Medlar and Sasano[6] have adduced some interesting work on the early lesion in intestinal tuberculosis in laboratory animals. They showed that when an animal was inoculated subcutaneously with tubercle bacilli it might develop intestinal ulceration; but even this sequence of events was not necessarily referable to hæmatogenous infection, for tubercle bacilli were demonstrated in the bile. Such bacilli obtained access to the bile from tuberculous lesions in the liver and thereby reached the intestinal mucosa. Medlar and Sasano[6] also demonstrated conclusively that tuberculosis of the mesenteric glands in the presence of no apparent intestinal lesion, a situation which every pathologist must have encountered, spelt microscopic lesions of ingress in the intestinal mucosa. The bacilli are not simply "swept through" the intestinal mucous membrane to the mesenteric glands without the excitement of any reaction at their points of entry. How frequently has one observed gross tuberculous changes in cervical glands, with microscopic lesions only in the tonsil on the same side! This is in fact the rule; and it would seem to be established that with regard to severity of tuberculous changes the same relationship frequently obtains between the intestinal lymphoid tissue and the mesenteric glands as that existing between the tonsils and cervical glands.

Perforation of a tuberculous ulcer in the intestine is generally considered to be a rare occurrence. In reporting an instance of perforation of a tuberculous ulcer of the ileum, W. B. Jameson[7] remarked that he had never before heard of one nor seen mention of any in a medical journal. His available library was of little assistance to him in this connexion. To have come across perforation of a tuberculous ulcer would not have surprised me to this extent. I recollect an example in the museum of the late Sir Harry Allen, and I have seen this complication more than once in my earlier days at the Children's Hospital, when bovine tuberculous infection occurred much more frequently than it does at the present time. The peritoneal reaction over the base of a tuberculous ulcer is a factor militating against perforation, and in the case of the child Gordon W. the plastic process in the peritoneum was notably lacking. With reference to the frequency of perforation in tuberculous ulceration of the bowel, Boyd[8] quotes Lawrason Brown as stating that it is at least as common as the perforation of a typhoid ulcer. Brown had found that 2·5% of all subjects of pulmonary tuberculosis coming to autopsy had intestinal perforation, complete or incomplete.

Conclusion.

Again I have wandered from the straight and narrow path which I intended to pursue, and consideration of tuberculosis following circumcision has resolved itself into a discussion of tuberculous ulceration of the intestine. It may be stated in extenuation that the discursiveness is more apparent than real, and that what measure there may be is fairly to be charged to the tubercle bacilli whose course through the infant's bodily tissues I have been trying to follow. At all events it is journey's end. This paper is the last of the series which I set myself to write around specimens selected from the pathological museum of the Children's Hospital, Melbourne. To all who by their kind comments and encouraging letters have appreciably lightened the labour I tender my grateful thanks.

Acknowledgement.

I am greatly indebted to Miss Rolleston, librarian of the New South Wales Branch of the British Medical Association, for her prompt location of references relevant to the subject of tuberculosis following circumcision. In addition to the article by Reuben,[1] Miss Rolleston supplied me with two other references[9][10] of more recent date. I have been unable to obtain access to them, but have included them in the bibliography.

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[4] A. Calmette: "Tubercle Bacillus Infection and Tuberculosis in Man and Animals", English translation, 1923.
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[6] E. M. Medlar and K. T. Sasano: "The Early Lesion of Intestinal Tuberculosis in Experimental Animals and Man", *American Review of Tuberculosis*, Volume X, 1924-1925, page 351.
[7] W. B. Jameson: "Perforation of the Ileum due to a Tuberculous Ulcer", *American Review of Tuberculosis*, Volume IX, 1924, page 423.
[8] W. Boyd: "Pathology of Internal Diseases", 1936, page 314.
[9] V. Zarubin: *"Beitrag zur Kenntnis der rituellen Zirkumzisionstuberkulose"*, *Dermatologische Wochenschrift*, Volume LXXXIX, July 6, 1929, page 995.
[10] G. Fedders: *"Ein 5 Jahre beobachteter Fall von Circumcisionstuberkulose"*, *Monatsschrift für Kinderheilkunde*, Volume XXXVIII, 1928, page 537.

SEVERANCE OF THE CERVICAL PART OF THE SPINAL CORD WITHOUT DISPLACEMENT OF VERTEBRÆ.

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WITH A COMMENT BY

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Clinical Record.

(By Maxwell M. Brown.)

ON February 19, 1939 R.V., a male, aged sixteen years, whilst playing leapfrog in shallow water, dived too vertically and, striking his head on the sand, doubled over into the water. He was unconscious when picked up and was removed by ambulance to Manly District Hospital. On admission he was conscious and complained of severe pain in the neck, of inability to move his legs, of loss of feeling below the level of the shoulders, and of a heavy feeling in the arms.

On examination he appeared to be suffering severely from shock. There was an extremely tender area over the region of the sixth cervical spine. There was complete flaccid paralysis from the feet as far up as the arms; paralysis was limited to the extensor muscles of the forearm, and all sensation was absent from the same area. The intercostal muscles were paralysed, but diaphragmatic breathing was moderately comfortable.

All reflexes were absent from the affected area. The pupils were small and equal, and reacted to light. The temperature was 36·2° C. (97° F.) and the pulse rate was 72 per minute. Three hours after his admission to hospital his respirations became noisy in character, with a rattling cough; his temperature rose to 38·4° C. (101° F.) and his pulse rate rose to 104 per minute. His systolic blood pressure was 130 millimetres of mercury, but his diastolic pressure appeared to be between 0 and 10. His arms took up the position of being flexed and pronated, with the hands in front of the chest at about shoulder level. Retention of urine, incontinence of fæces and priapism were present from the onset. The abdomen became very distended and the bowels responded poorly to the administration of pitressin and to enemata.

On radiographic examination Dr. Norman Little, who saw the patient in consultation, was of the opinion that the body of the sixth cervical vertebra was cracked vertically. Fluid removed by lumbar puncture next day emerged at a very slow rate and was blood-stained. The temperature varied between 38·9° and 39·5° C. (102° and 103° F.).

On February 23, owing to increasing respiratory difficulty, a plaster collar was applied and the patient was propped up in bed. At this period he was able to perceive deep pressure and percussion applied to the lower limbs.

At 9 p.m. on February 23 air hunger and cyanosis developed. His temperature suddenly rose to 42° C. (108·4° F.) and half an hour later to 42·8° C. (109·6° F.). Death occurred at 9.45 p.m.

A *post mortem* examination confirmed the X ray findings and revealed that the spinal cord had been almost completely severed; it was hanging only by the posterior columns, and there was a distinct gap filled with blood clot between the severed portions.

Comment.

(By Norman Little.)

There are several interesting features connected with this case:

1. It was found impossible to take a satisfactory lateral X ray picture of the cervical portion of the spine; but on careful examination of the antero-posterior films, especially after the *post mortem* specimen had been seen, a transverse fracture could be observed running across the middle of the body of the sixth cervical vertebra and extending into the lateral masses.

2. There was a return of the sensations of percussion, joint movement and deep pressure on the third day after the accident. This is remarkable when the state of the spinal cord is considered, and almost led me to believe that the lad would recover.

3. The hyperpyrexia shortly before death, in the absence of any damage to the brain, prompts me to ask the neurologists if there is any accessory heat-regulating centre in the cervical region of the cord. The reading of 42·8° C. (109·6° F.) is the highest temperature of which I have had experience.

4. The complete severance of the spinal cord, with the exception of the posterior columns, without any evidence of bone displacement is difficult to explain. At the *post mortem* examination there was absolutely no evidence that any dislocation of the cervical part of the spine had taken place; all the ligaments of the joints in the vicinity were intact and showed no evidence of trauma. The posterior longitudinal ligament was unmarked; the *dura mater* was punctured as if a bullet had penetrated it, but there was no evidence of any spicules of bone having done the damage. The only explanation I can give is that there was an explosion effect from the crushing of the body of the sixth cervical vertebra.

Acknowledgements.

My thanks are due to Dr. Norman Little, consultant orthopædic surgeon, for his interesting commentary, and to Dr. Norman Davis for his valuable assistance and his permission to publish this case.

A REPORT OF A SERIES OF PATIENTS TREATED WITH WHEAT GERM OIL CAPSULES.

By E. KENT HUGHES, M.B., B.S.,
Armidale, New South Wales.

THESE are the days of vitamins and yet more vitamins; but I venture to record my experience over the past eighteen months in the treatment of patients by vitamin *E* as contained in wheat germ oil capsules.

This vitamin was reported to be effective in preventing abortion and premature birth, so since August, 1937, I have been treating with it all patients who gave a history of such occurrences in their reproductive life and who were again pregnant.

I am recording the history of only those patients who have completed their pregnancies. The list comprises all patients so treated in my practice, with the exception of one *primipara* who began to have hæmorrhage at the third month and at the sixth month aborted on account of a hydatidiform mole.

The capsules cost nine shillings for fifty; and as the dosage is one capsule daily up to seven months' gestation, and three a week after that time, the cost of the treatment is not prohibitive.

The history of the patients treated and the results of treatment are shown in the following table.

Patient's Number.	Previous Obstetrical History.	Result of Treatment.
I	One normal pregnancy. One miscarriage. One infant lived twelve days. Two miscarriages. Gilliam's operation performed for retroverted uterus.	Healthy male infant at term.
II	One miscarriage. One normal pregnancy. One miscarriage. Pains and dilatation of cervix at five months; fœtal head low in pelvis (occurred in this pregnancy).	Healthy male infant at 38 weeks' gestation.
III	One normal pregnancy. Four miscarriages (no reaction to Wassermann test). One infant lived half an hour.	Healthy male infant at term.
IV	One normal pregnancy. One miscarriage.	Healthy female infant at term.
V	One miscarriage.	Healthy male infant at 38 weeks' gestation.
VI	One normal pregnancy. Bleeding at four months' gestation for a week occurred in this pregnancy.	Healthy male infant at 38 weeks' gestation.
VII	One miscarriage at four months' gestation. One miscarriage at five months' gestation. One premature infant, stillborn, at seven months' gestation. (No reaction to Wassermann test.)	Healthy female infant at 37 weeks' gestation.
VIII	Three normal pregnancies; an adherent placenta with the third infant, and a raised temperature for fourteen days afterwards. Two miscarriages. One infant stillborn at six months. One miscarriage.	Healthy female infant a term.

Discussion.

These cases reported were absolutely consecutive, and 100% success was achieved; but as the number of patients is only eight, it would be most interesting for a worker at a big hospital to experiment with a much larger series. These patients are all from my private practice, and their home conditions are uniformly good. Every woman was most desirous of bringing her pregnancy to a successful conclusion, and in only one case was there a slight chance that two of the miscarriages had been caused by interference. The other miscarriages came on without any obvious reason. In this series eight women

had eight healthy infants, all weighing from six and a half to eight pounds, except the child of the fourth patient, who weighed five and a quarter pounds.

The women between them had previously had eight normal infants, two stillborn children, two infants that lived only a few days, and fifteen miscarriages. The suggestion of using wheat germ oil capsules was made to me by Dr. J. S. Green, of Melbourne.

CONGENITAL CYSTIC DILATATION OF THE COMMON BILE DUCT.

By IAN HAMILTON, M.B., B.S., F.R.C.S., F.R.A.C.S.,
Honorary Assistant Surgeon, Adelaide Hospital, Adelaide.

ON November 2, 1938, I was requested to see a woman, D.E., aged twenty years, who was thought to be suffering from acute cholecystitis. At 7.30 a.m. on that day she had developed pain in the right upper quadrant of the abdomen. The pain, which was constant, radiated through into her back, making her want to roll about, without any inclination to vomit. She stated that she had had similar attacks as long as she could remember. The periodicity varied from daily attacks to a period of three years' freedom from pain. She had never been jaundiced as far as she knew, and had vomited only once; that was during an attack two years previously. Her appetite was good between attacks, her bowel action was regular, and sometimes after an attack she had had clay-coloured motions. She had had no other illnesses, and her parents were healthy.

Examination revealed a young woman obviously greatly distressed by severe pain, panting and rolling around. Her skin was very dry, her temperature was 36·2° C. (97° F.), her pulse rate 92 per minute, and her respirations numbered 20 per minute. The tongue was slightly furred, the breath was malodorous, and there was no abnormality in the mouth or chest. The upper surface of the liver, as shown by percussion, was at the fifth rib in the mid-clavicular line. The abdomen was not rigid, but was difficult to palpate on account of the rolling movement. The right hypochondrium was very tender, and a firm tender mass was palpated in this region and was taken to be the liver extending 5·0 centimetres (two inches) below the right costal margin. The patient vomited after examination, and I decided to operate immediately with the tentative diagnosis of acute cholecystitis.

With the patient under general anæsthesia, induced by ether, I palpated a separate mass, which I took to be the gall-bladder, in addition to the liver edge.

On opening the abdomen through a right supraumbilical paramedian incision I found that the liver edge extended about 6·25 centimetres (two and a half inches) below the costal margin. The gall-bladder was very distended, thickened and displaced laterally by a large cyst, which was lying between the portal fissure and the duodenum, the latter running over and being closely attached to the cyst wall. The cyst was aspirated and bile was obtained in a considerable quantity (ten ounces). This manœuvre caused the gall-bladder to collapse. The cyst was then opened and all bile was dried out and its full extent explored. The gall-bladder was also opened, but the communication between the two could not be found. The cyst was of such a size that probably three-quarters of a pint of fluid could have been put in it; its shape inside was extremely irregular. Some of the wall was removed for biopsy and was later reported as chronic granulation tissue lining a fibrous wall. The opening in the cyst was then closed with three layers of fine plain catgut and a cholecysto-gastrostomy was performed in the following manner. The fundus of the gall-bladder was brought across the front of the cyst to the prepyloric part of the stomach. The abdomen was drained down to the cyst wall and closed in layers.

Except for slight abdominal distension and post-operative vomiting lasting about two days the patient's recovery was almost uneventful, and she was discharged from the hospital twenty-eight days after admission. The rather long stay was accounted for by the fact that she had a rise of temperature to over 37·3° C. (99° F.) nearly every night for three weeks, and, her general condition being poor, it was thought necessary to allow her a period of rest adequate for complete recovery.

Reviews.

BIOLOGICAL CHEMISTRY.

IN its fifth edition "A Textbook of Biochemistry", by A. T. Cameron, has been almost completely rewritten.[1] The book is an attempt by a single author to cover in some four hundred pages a very wide range of biochemical knowledge. The scope of the book is wider than that attempted by larger works, such as Lusk's "Science of Nutrition" or Sherman's "Chemistry of Food and Nutrition". It cannot be said that the author has been completely successful in his ambitious project, but one must admire his courage.

Having limited the size of the book, the author should have made a more serious attempt to balance the space given to subjects of different relative importance. Some important fields of biochemical knowledge receive scant attention, while the graphic representation of complex organic formulæ extends over much valuable space. At the same time, in order to conserve space, the text is tersely written, and this has led to dogmatism and ambiguity. For example, on page 351 we read: "It has long been known that ingestion of protein stimulates metabolism. As a result more heat is produced than would be derived from oxidation of the actual amount of protein ingested." If this were to be accepted literally, one would be hard put to it to explain the growth of carnivora. In discussing diabetes we find (page 138): "In this disease disturbances of fat metabolism are secondary to those of carbohydrate metabolism." It may be advisable to teach students in such a fashion, but a bald statement of this nature is unworthy of a text-book in our present comparative ignorance of this disease.

In many places the English is loose. For example, on page 211 we read: "Most of the non-enzymic constituents of these juices (excluding bile) can be regarded as compounds passively secreted from blood by the secreting glands. This applies specially to the mineral ions and such easily diffusible compounds as urea." On page 97 we read: ". . . . then there should be an increase of blood glucose of over 1·6 per cent.", the author wishing to imply that the concentration of glucose in the blood would exceed 1·6%. On page 107, "polyuria (frequency of urination)". On page 273 we read that: "Venous blood loses during its passage through the lungs seven volumes of carbon dioxide."

The following errata were noted: On page 12, first line below diagram, for "has a diameter of 5 m." read "has a diameter of 5 mμ". On page 15, line 13, for "(large) calories" read "(small) calories". On page 74, line 15, for "Silva" read "Zilva". Page 142, for "ovo-globulin from egg-yolk" read "ovo-globulin from egg-white". On page 159, table of iso-electric points, for "glutenin $3{\cdot}2 \times 10^{9}$" read "$3{\cdot}2 \times 10^{-9}$". On page 199, line 21, for "hyperplasia" read "hypoplasia". On page 213, Table XVI is beyond our understanding. On page 352, line 21, for "hyperthyroidic" read "hypothyroidic". Page 354, line 16, "Table XXXVI" should be "Table XXXVII". Page 354, in the last sentence but one on the page, discussing heat of combustion of

[1] "A Textbook of Biochemistry for Students of Medicine and Science"; by A. T. Cameron, M.A., D.Sc., F.I.C., F.R.C.S.; Fifth Edition; 1938. London: J. and A. Churchill Limited. Demy 8vo, pp. 422, with 3 plates and 25 text figures. Price: 15s. net.

glycogen, the author fails to mention the unit of glycogen combusted. On the last line of the page, for "corresponding weight" read "corresponding molecular weight".

The author has packed an enormous amount of material into a small volume, and has been able also to include numerous entertaining asides. At the end of each chapter there is a small list of references. The book can be recommended as a general text-book of biochemistry only for those with a thorough general chemical knowledge, who have a wide range of interest and who are prepared to read the text with understanding.

THE TROUBLED MIND.

"THE TROUBLED MIND", by C. S. Bluemel, is an amazingly complete text-book of neurotic symptoms, illustrated by a wealth of brief case histories.[1] Dr. Bluemel has a very clear perception of the finer shades of neurosis, and it would be difficult for a patient to persuade him into a respectable physical diagnosis for his neurotic malady. This book therefore may be highly recommended as a practical guide to the general physician, especially if he lacks either the time or the inclination to dabble in psychological theory. Dr. Bluemel himself has little or no time for the generally accepted ideas of what may be called the new psychology, and presents a theory of his own to account for the development of neurotic and psychotic symptoms. The individual forms of mental disorder are laid down by heredity, he believes, and the patterns of neurosis built up by the associations of what he calls "to and from" reactions—early responses to and recoils from favourable or unfavourable situations. This suggests at once Freud's fundamental pleasure-pain principle; but Dr. Bluemel insists that it is something different, in that the original "to and from" reactions are not entirely dictated by considerations of pleasure and pain.

His therapy seems to consist of a mixture of rest in hospital and good suggestion; in this, apparently, the errors of his thinking are pointed out to the patient.

In both theory and suggested therapy Dr. Bluemel shows a lack of real insight into psychological problems.

A BOOK by Dr. Harry Roberts, called "The Troubled Mind", is a short but profound contribution to psychological literature.[2] Dr. Roberts writes as a man of wide experience, who has achieved a settled philosophy of life; his book is therefore good general reading as well as a source of interest and enlightenment to the physician. He discusses the mind and its manifold disorders with much discernment, and his conclusions are obviously based on wide reading and long experience. His remarks on the place of Freud in modern psychology are well worth consideration, representing broadly as they do a rapidly growing school of psychological thought in England. He confesses himself vastly irritated by some of the Freudian theories, particularly those connected with dream symbolism and its somewhat arbitrary interpretation, but finds himself disarmed by the fact that Freud has frequently changed his mind on various points and has had no hesitation in saying so. He pays homage to Freud as a great man, who has paved the way to a real understanding of psychopathology, and thinks his chief weakness has lain in a lack of scientific precision, that is, in his failing to make clear the difference between his "inferential guesses and logically deduced conclusions".

Dr. Roberts, like everyone who has had experience either as physician or patient of the tortuous business of psychoanalysis, is weighed down by its many complications. He is inclined to favour the modified form of analysis which has for some time been the psychotherapist's dream, and which is beginning unmistakably to show some good results. The general idea is to aim at the treatment of the particular neurotic symptom for which the patient is consulting the physician, and if this symptom can be to some extent relieved (as it often can) by a shorter analysis, the physician need not feel cast down because the patient has not been "reborn" according to the Freudian standard.

Dr. Roberts writes with insight and sympathy of other manifestations of the troubled mind—psychotic disorders and the varying degrees of mental defect. In describing symptoms and suggesting treatment he never fails to be interesting and helpful.

A TEXT-BOOK ON SURGERY.

THE production of yet another book concerned with the teaching of surgery may at first sight appear entirely superfluous, in view of the large number of standard works already in existence; yet "The Essentials of Modern Surgery", edited by R. M. Handfield-Jones and A. E. Porritt, assisted by thirteen of their colleagues from the various London teaching hospitals, does justify its appearance and provide students and general practitioners with a happy medium between the "short" text-book which supplies merely easily assimilable material with which to satisfy examiners, and the larger comprehensive works of two or more volumes, used mainly for reference purposes.[1] Particular attention has been paid throughout to the fundamental principles of anatomy, physiology and pathology, in their bearing on the clinical picture of the various disease states. In doing this the authors have sought to encourage the student to rely upon physical signs and the use of clinical methods of examination in making a diagnosis rather than upon a hasty recourse to special and laboratory investigations. The details of operative technique have been omitted from sections on treatment, as, in accordance with the customary English practice, knowledge of this branch of the subject is not regarded as being essential, except for specialists in surgery.

The scope of the work is comprehensive, and includes chapters on all the branches of surgery, with the exception of diseases of the eye, which are wisely left out, for herein a little knowledge is a dangerous thing. The chapter on physiotherapy and radiotherapy is an innovation and deals with the methods of X ray diagnosis available to the various regions of the body; it also contains a very brief section concerning radium, which might well be enlarged upon in later editions.

The chapter on chest surgery is extremely welcome, and gives a concise modern exposition of the subject. For the rest it is difficult to particularize, but the chapters on the brain and its coverings, injuries and diseases of the nerves, herniæ, the appendix, and the diseases of the ear, nose and throat, may be regarded as the best in the book; the remainder, speaking generally, cover their subjects satisfactorily. Several minor matters and omissions call for comment, however. In the discussion on the administration of fluids after hæmorrhage and in shock the painless and efficient intramuscular method, so widely used in the United States of America, has not been mentioned, although it is stated that seven to eight pints can be given *per rectum*—an out-of-date and futile procedure. The treatment of burns is rather too sketchy for such an important subject. In hydatid diseases the

[1] "The Troubled Mind: A Study of Nervous and Mental Illness", by C. S. Bluemel, M.A., M.D., F.A.C.P., M.R.C.S.; 1938. London: Baillière, Tindall and Cox. Large crown 8vo, pp. 530. Price: 13s. 6d. net.

[2] "The Troubled Mind: A General Account of the Human Mind and its Disorders and their Remedies", by H. Roberts, with chapters on the insanities by M. N. Jackson; 1938. London: John Murray. Crown 8vo, pp. 284. Price: 6s. net.

[1] "The Essentials of Modern Surgery", edited by R. M. Handfield-Jones, M.C., M.S., F.R.C.S., and A. E. Porritt, M.A., M.Ch., F.R.C.S.; 1938. Edinburgh: E. and S. Livingstone Medium 8vo, pp 1141, with 501 illustrations. Price: 30s. net.

Casoni intradermal test has been omitted, although now so uniformly relied upon; and Frey's bacillus, with its antigenic dermal test, should receive consideration in the sections on *lymphogranuloma inguinale*, regional ileitis and stricture of the rectum.

In the chapters on the stomach and intestines, surely the use of the old-fashioned Ewald's test breakfast has been entirely replaced by the fractional test meal method of investigation, and could be omitted; whilst there seems no reason for regarding congenital abnormalities of the stomach, such as hypertrophic pyloric stenosis and diaphragmatic herniæ, as pathological curios only, when much can be done to relieve them. The treatment of acute diverticulitis deserves more elaboration, and mention might well be made of the value of plain X ray examinations in the diagnosis of intestinal obstruction. The method of injecting piles by placing four or five cubic centimetres of a 5% solution of carbolic acid in almond oil above the pile-bearing area should also be included as being a safer and more effective treatment by injection; and the same applies to the use of radium for epithelioma of the anal canal, where it is just as efficient as in the lips.

In the discussion on the after-effects of head injuries, the word "infinitesimal" applied to the occurrence of the "true" sequelæ is regarded as a bad one, since modern methods of investigation have proved that many patients relegated to the "traumatic neurasthenia" dust-bin really have organic lesions of the brain. Whilst admiring the advice given concerning immediate and complete rest after head injuries till the patient is symptom-free, we think that considerable difficulty would be met with if all patients who have sustained a cerebral contusion or laceration were made to stay in bed for twenty-eight days.

In discussing trigeminal neuralgia the authors advocate different injection techniques in different chapters, and show the need for better coordination, so often lacking in works of multiple authorship; whilst surely it is dangerous, as well as unnecessary, to place three cubic centimetres of alcohol into the ganglion. The section on the sympathetic system is out of date concerning the treatment of Raynaud's disease and other conditions, in which recent researches have shown that only pre-ganglionic fibres must be severed.

The possibilities of plastic surgery might well have been included in the discussion of injuries; and more illustrations of fracture setting would have been helpful.

The text itself is clear and well set up on art paper throughout, with excellently produced illustrations. Yet many typographical and spelling errors have been allowed to remain, and in places the use of heavy black type for the subheadings whilst the main heading is in light type is rather confusing. Considered as a whole, however, the book contains much excellent material and sound practical advice, and should be most useful as a text-book for students.

MODERN SCIENCE.

LIFE leaves little time nowadays for the study of history; yet without it a full understanding of many problems is perhaps hardly possible. In science particularly is this true, for every scientific worker depends on the work of his predecessors and every scientific advance represents the united efforts of a team of workers, often separated by time and space. For many years Cambridge University lacked any organization for the study of the history of science; in 1936, however, realising that something worthy of consideration and of cultural value was being lost through neglect, a committee was formed at Cambridge to arrange courses of lectures on the development of science. In this book, "Background to Modern Science",[1] the editors, Joseph Needham and Walter Pagel, have gathered together the inaugural series of ten lectures.

The lecturers were men distinguished not only for erudite achievement, but for original contributions to scientific knowledge. In the first two chapters Professor Francis Cornford discusses Greek natural philosophy and modern science, and Sir William Dampier covers the period from Aristotle to Galileo.

The remaining eight lectures deal with the modern period 1895 to 1935, and resolve themselves into a clear and concise account of the development of scientific thought and practice during the last forty years. The late Lord Rutherford reviews the history of radio-activity and the development of the theory of atomic structure, Professor W. L. Bragg the physics of atomic arrangement, F. W. Aston the atomic theory, and Sir Arthur Eddington astronomy.

Only to a favourite of the gods is power given to comprehend all knowledge; if thus far the average medical man finds the reading of these lectures just at times a little arduous, in the last four his course will run more smoothly along paths of knowledge he already knows but feels he should know better.

The story of physiology and pathology during the last forty years is unfolded by John A. Ryle, parasitology and tropical medicine by Professor Nuttall, evolution by R. C. Punnett, and genetics by J. B. S. Haldane.

There is room for this book. Apart from the exact knowledge imparted, the lectures illustrate in a variety of ways the interrelation of the sciences and what Professor Ryle describes as "the importance of continuity in thought and action". The present-day literature of science has grown so vast that one is apt to become lost in it as in a fog. This book will serve as a reliable compass.

A POPULAR BOOK ON FOOD.

THAT "Food, Health, Vitamins", by R. H. A. Plimmer, D.Sc., and Violet G. Plimmer, meets a need is sufficiently evident from its having reached its eighth edition in thirteen years.[1] Written for the general reader, it is also most useful for doctors, nurses, dietitians and those in charge of schools and other large communities. Lucidly written, it contains very valuable diagrams illustrating the "square meal" and the common deficiencies in many diets. There are tables of the mineral and vitamin contents of many foods, and of the percentage analyses of the commoner foodstuffs. It would be hard to better the account of the vitamins (to which the authors devote most of their attention). The writers advise that expectant mothers should increase the protein content of their daily food allowance, as also the amount of their vitamins. Nurses and doctors who are so prone to reduce or even to cut off the protein of expectant mothers should take this to heart.

The value of this book to the laity would be even greater if the authors were to give a few paragraphs to the subject of food allergies; they do not draw enough attention to the traditional fact that "one man's meat is another man's poison". Condiments do not seem to have been studied, while the fact that tinned and corned foods are liable to upset many individuals is ignored by them. This is very evident in their standard cheap diets, in one of which they advise corned beef four times a week, and in another twice a week. As a continued diet this, especially the first, would surely not be satisfactory to many people, and would be most disturbing to some.

[1] "Background to Modern Science: Ten Lectures at Cambridge arranged by the History of Science Committee, 1936", by F. M. Cornford, W. Dampier, Lord Rutherford, W. L. Bragg, F. W. Aston, A. S. Eddington, J. A. Ryle, G. H. F. Nuttall, R. C. Punnett, J. B. S. Haldane, edited by J. Needham and W. Pagel; 1938. Cambridge: The University Press. Crown 8vo, pp. 255. Price: 7s. 6d. net.

[1] "Food, Health, Vitamins", by R. H. A. Plimmer, D.Sc., and V. G. Plimmer; Eighth Edition; 1939. London: Longmans, Green and Company Limited. Crown 8vo, pp. 243, with coloured frontispiece and diagrams in the text. Price: 5s. net.

The Medical Journal of Australia

SATURDAY, MAY 27, 1939.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction, are invited to seek the advice of the Editor.

THE SPIRIT OF PASTEUR.

OUR Paris correspondent, in his quarterly letter published in this issue, refers to the celebrations connected with the fiftieth anniversary of the foundation of the Pasteur Institute. This event should not be allowed to pass unnoticed in Australia, for not only did this institute at its establishment mark the zenith in the life of one of humanity's greatest benefactors, but it has been the progenitor of all present-day institutes and laboratories of medical research. From our correspondent's description, short though it is, of the ceremony of March 15 last we can imagine the enthusiasm with which French scientists and men of letters and public affairs, in the company of representatives of other nations, met together to commemorate the life of a great man, to glory in his achievement and to give thanks for the succour that he brought to mankind. We may be sure that many a pilgrimage was made during the jubilee celebrations to the beautiful mausoleum at the Pasteur Institute where the body of the scientist was laid to rest near to the scene of his labours and, in the words of Leslie Cowlishaw, "close to the heart of Paris, with Faith, Hope, Love and Science watching over him".

To think of the Pasteur Institute is to think of Louis Pasteur. Much has been written about him. His diligent search for truth, his courage in the face of opposition, his disregard of bodily illness and infirmity have been used to adorn many a tale and to point many a moral. He has even, in these latter days, achieved the fame of a cinematograph film, partly wrong, it is true, in detail, but right in sentiment and useful in purpose. Readers of this journal will find attractive accounts of his life from the pens of Dr. Cowlishaw and Dr. A. H. Tebbutt in the issue of November 12, 1927. But those who wish to know the full story of the man will read "La Vie de Pasteur", by René Vallery Radot—a book of enthralling interest and a classic for all time.

Science is international; it is one of the few sheet anchors of the civilized world in these days of unrest. A year or two after the cessation of hostilities in the last war a world-renowned musician who had been an enemy subject said, while addressing an Australian audience, that science, art and literature were international and that devotion to them and intercourse between their devotees might well serve in the promotion of understanding and peace between the nations. It was the same idea which led the Balkan Medical Union to send to medical journals of the world the letter published in this journal on April 22 last. In his speech, read by his son at the opening of the Pasteur Institute, Pasteur said that the presence of the President of the Republic at the gathering reminded him that there were two laws: one was a law of blood and death, which, devising every day new means of warfare, forced people always to be ready for the field of battle; the other was a law of peace, of work, of safety, whose only object was to deliver humanity from the scourges assailing it. One sought only violent conquests, the other merely to be of help to humanity. The latter put one human life above all victories; the former sacrificed hundreds of thousands of lives to the ambition of one individual. These words are as true today as

they were when Pasteur uttered them; and possibly people realize their truth. Pasteur, we are told by Garrison, was a *sensitif* who never inflicted wanton or needless pain on others. His life was a life of service. The world today needs to be endowed with the spirit of this *sensitif* and with the spirit of the race of searchers for truth, founded by him, who have since his days been working in his institute and in hundreds of others founded in its image and likeness and scattered in all countries. This, it may be objected, is idealism, and facts must be faced, force must meet force. This may be true, but idealism must be preached and practised even in the face of what may appear to be its opposite. It is worth the seeking; the seeker will be the better for his effort and his influence will not be other than good. Medical practitioners are supposed to be among the enlightened members of any community. They should strive to be at least part of the leaven which in the end may leaven the whole lump. By cultivating a spirit of service to the community as a whole they may take some steps in this direction. Nowadays far too much is heard of individual and professional rights and not nearly enough of service to the community. Since we are all members one of another, we are all servants one of another. If we are all servants one of another, individual rights and the welfare of the whole body politic should not be incompatible. Medical practitioners in their own sphere should try to remove the incompatible elements, certain of which are without doubt of their own creation.

Current Comment.

EXPERIMENTAL STUDIES IN HYPERTENSION.

ARTERIAL HYPERTENSION is still medical news both in scientific literature and in the lay Press, particularly in the more lucrative section of the latter. The experimental method is still producing information of interest and importance, as is evidenced in an article by Stanley J. G. Nowak and Irving J. Walker.[1] Hypertension may be produced in the animal by a number of methods, which include those involving an interference with the neural vasomotor connexions and those designed to produce changes in the renal mechanism. The most important nervous structures concerned with blood pressure in this connexion are the carotid sinus and aortic-depressor nerve, and the abdominal sympathetic ganglia and splanchnic nerves. The latter have been the subject of a good deal of what must so far be regarded as experimental surgery, and the present writers record some of their animal results in this field. They found, for example, that a dog with a persistent hypertension caused by denervation of the carotid sinus and section of the aortic depressor nerve was affected only temporarily by subsequent surgical procedures. Extirpation of the right adrenal gland produced a temporary fall in blood pressure, but the former level was regained in two months. The effects caused by bilateral abdominal sympathectomy and excision of the stellate ganglion and the consecutive ganglia to the eighth dorsal were much less striking and equally evanescent. Other workers have shown that these procedures can prevent the development of hypertension due to subsequent denervation of the carotid sinus; but Nowak and Walker, however, cannot confirm this, and maintain that even previous complete sympathectomy will not protect a dog from hypertension when the carotid sinus depressor mechanism is removed. What the cause of this variety of hypertension is they are unable to suggest—whether it is due to the liberation of some intrinsic chemical factor or to the operation of some unknown vaso-constrictor mechanism. The hypertension itself would seem to be largely vasomotor in origin, but they believe from their work that an organic factor, such as arteriosclerosis, may be excluded in their laboratory animals. On the basis of this work Nowak and Walker suggest that there is little, if any, rationale for operations on the sympathetic nervous system in the essential hypertension of man.

With regard to the variety of hypertension caused by a vaso-constrictor principle liberated by an ischæmic kidney, there is also evidence of the ineffectiveness of sympathectomy. The writers, however, point out that when unilateral pyelonephritis has been followed by hypertension the removal of the affected kidney has apparently abolished the undue rising of the blood pressure. This cannot have a wide clinical application, but is worthy of being borne in mind. The whole subject of renal hypertension is still extremely involved; but there seems little doubt that there is some substance produced by the ischæmic kidney, as transplantation experiments have presented quite convincing evidence of this. Whether the effect of such hypothetical substance is direct or through some endocrine mediation is not known.

Nowak and Walker claim to have demonstrated still another possible mechanism of hypertension, at least in the laboratory animal—that is, chronic cerebral anæmia. By progressive ligation of the various cerebral arteries they have produced chronic hypertension in dogs, though they remark that this animal has remarkable ability to reestablish a normal cerebral circulation by anastomotic channels.

[1] *The New England Journal of Medicine*, February 16, 1939.

If this is true, it indicates another possible link in the chain which forms the vicious circle of hypertension, with its involvement of brain, heart and kidneys. The value of the experimental approach is that it gives background to consideration of the problem. Though the results of artificial surgical procedures in the dog may not be comparable with those of a pathological process whose origin is but dimly known, if at all, especially in view of the short life of this animal, with its intense metabolic activity, yet we may see a certain parallel with the results obtained by neuro-surgeons in human hypertension. The immediate results do not appear to be sustained as a rule, and the rather heroic nature of the procedures adopted must make us cautious in our judgement.

TUBERCULOPROTEIN.

A VALUABLE contribution to the literature of tuberculosis has been made by H. J. Corper and M. L. Cohn.[1] They preface their observations by remarking that, more than most other diseases, tuberculosis may be classed as the disease of striking quantitative relations. Animals may survive large amounts of bacilli for a long time, while extremely small numbers of highly virulent mammalian tubercle bacilli will lead to progressive disease in the normal animal. Besides the variegated pathogenicity, these complicated relations may designate tuberculosis a mosaic disease. In 1921 H. Zinsser made a report on the biological protein reactions produced by extracts of the tubercle bacillus. He found that the reaction to tuberculin was independent of general anaphylaxis to tuberculoprotein. In its typical and extreme form hypersensitiveness to tuberculin cannot be induced by dissolved extracts of the tubercle bacillus, if they are filtered through Berkefeld filters for the removal of formed particles. It can, however, be induced in characteristic fashion by infection with the living bacilli and by treatment with dead organisms, even when boiled. Zinsser's work was criticized on the grounds that it was not explicitly stated what organisms were used, that the extracts were crude and that deductions were indirect, as only the Dale uterus method was employed as a test of the biological reaction. Accordingly no definite quantitative factors could be noted.

The investigations of Corper and Cohn were devoted primarily to specific immunity. However, in view of the fact that allergy or hypersensitiveness to tuberculoprotein had been previously deemed to be an undissociable part of the immune reaction, they also considered both the possibility of their inducing hypersensitiveness to tuberculoprotein and of their correlating this with specific immunity. They considered that if pure tuberculoprotein would produce a sufficiently high grade hypersensitiveness and if hypersensitiveness were synonymous with specific immunity, pure tuberculoprotein should be valuable for this purpose. Experiments were undertaken to ascertain the toxicity of Seitz filtrate and purified tuberculoprotein, and particularly the toxicity of concentrated Seitz filtrates, and also the relationship to anaphylaxis or allergy. The results of the experiments accorded with the views of Lewis and Seibert, that there is a protein in the filtrate of cultures of tubercle bacilli on non-protein synthetic media which induces sensitization and provokes general anaphylaxis. Study was likewise made of the cutaneous reaction resulting from repeated intracutaneous injections of tuberculoprotein in Seitz filtrates, and endeavours were made to produce specific immunity with tuberculoprotein.

As the result of these observations Corper and Cohn conclude that specific immunity against infections with virulent human tubercle bacilli cannot be produced by Seitz filtrates from cultures of virulent human tubercle bacilli, by highly concentrated (ultradialysis) filtrates or by the precipitated tuberculoprotein or alum-treated filtrates. They found also that the highly concentrated filtrates, or precipitated tuberculoprotein, possessed no appreciable primary toxicity for normal animals. A primary intravenous injection of large amounts of normal Seitz filtrates, highly concentrated (by ultradialysis) filtrates or precipitated tuberculoprotein from these filtrates does not produce sensitization to a second intracutaneous injection with a fairly large test dose (0·1 milligramme) of either filtrate or tuberculoprotein. A reaction to tuberculin, however, can be obtained in a tuberculous guinea-pig with as small a dose of the same material as 0·000005 milligramme. A primary intravenous injection of about 2·0 milligrammes of tuberculoprotein in any of the forms mentioned in the text sensitizes guinea-pigs to a lethal intravenous provocative dose of so small an amount as about 1·0 milligramme of the tuberculoprotein in such form. This observation of Corper and Cohn is in confirmation of the investigations of Zinsser, who worked only with large quantities of bacillary extracts and demonstrated a striking difference between cutaneous and anaphylactic reactions. To produce cutaneous hypersensitiveness to tuberculoprotein requires a small quantity of avirulent human tubercle bacilli (a tubercle-forming dose), a large amount of heat-killed tubercle bacilli (about 100 milligrammes) and very small quantities of virulent tubercle bacilli. With the last mentioned the factors of multiplication and tuberculous involvement complicate the picture. Corper and Cohn conclude by stating that there is a striking quantitative difference between the specific immune and the concomitant allergic or anaphylactic features of tuberculosis, which will eventually require independent consideration in the complete evaluation of tuberculosis in man, as one is protective and the other exhibits a peculiar type of intoxication which has not yet been explained.

[1] *The Journal of the American Medical Association*, February 4, 1939.

Abstracts from Current Medical Literature.

MEDICINE.

Alkalosis.

L. C. GATEWOOD (*The American Journal of Digestive Diseases and Nutrition*, October, 1938) discusses carbonate excretion in the urine as an indication of alkalosis. In certain cases of peptic ulcer in which treatment with alkalis was given, including sodium bicarbonate, alkalosis developed. A test of the urine with a 20% solution of nickel sulphate gave an approximate estimate of the amount of soluble carbonate in the urine. A few cubic centimetres of 20% nickel sulphate solution were placed in a glass tube; onto this filtered urine was floated. A white ring at the junction of the two fluids was due to nickel carbonate; in normal subjects the quantity of carbonate was insufficient to produce a detectable ring; the thickness of the ring afforded a simple test of the quantity of carbonate present. During the treatment of peptic ulcer this test revealed the quantity of carbonate in the urine when sodium bicarbonate was administered in doses greater than two to four grammes (30 to 60 grains) a day. If during this treatment, especially when larger doses of sodium bicarbonate were being administered, the test revealed diminution or absence of carbonates in the urine, symptoms of alkalosis were sought and the carbon dioxide combining power of the blood was tested. If the level of the blood carbon dioxide combining power exceeded 65 volumes *per centum*, usually carbonate excretion ceased and symptoms of alkalosis appeared. If the administration of bicarbonate ceased at this stage there followed a return to the normal acid-base equilibrium and disappearance of symptoms. Though alkalosis is rare, the author advises the use of calcium carbonate and phosphate, tribasic magnesium phosphate, magnesium oxide, magnesium carbonate and aluminium hydroxide rather than sodium bicarbonate.

Lead in the Printing Industry.

J. M. HEPLER, P. F. REGIN AND R. W. COLINA (*The Journal of Industrial Hygiene*, December, 1938) made a preliminary survey of the literature dealing with the lead hazard in the printing, electrotyping and engraving industries. Only a few publications dealt with the lead fume hazard, and their data differed greatly as to the fuming temperature of lead; but they tended toward agreement that in the printing industry lead was being held well below its fuming temperature. However, fourteen plants were investigated and samples of air were taken by means of a Greenbury-Smith impinger in 10% nitric acid solution. The lead determinations indicated the presence in the air of quantities varying from 0 to 7·7 milligrammes in 10·0 cubic metres of air. Then laboratory tests were made by means of lead metals in a plumber's crucible, a Bunsen burner and pyrometer. A hood was placed over the lead pot and the samples of air were withdrawn by an impinger as before. It was found that at 450° F., just 10° above melting point, a concentration of 1·63 milligrammes of lead per 10·0 cubic metres was found. Higher temperatures resulted in higher lead fume concentrations. The usual linotype practice is to hold the lead temperature between 525° and 540° F.

Granite Workers' Nasal Resistance in Breathing.

EDWARD C. J. URBAN (*The Journal of Industrial Hygiene*, December, 1938) investigated the resistance offered by the nasal passages to the passage of air drawn at predetermined quantities of flow into the mouth and out through the nose. One hundred and thirty-nine men were selected at random from amongst granite workers. Apparatus and practical procedure are described in detail. The results indicated that the nose may play some part as a protective device in workers exposed to dust hazards, but this part appears to be slight.

Determination of Acid-Insoluble Matter in the Sputum of Silicotics.

H. CIVIN, I. A. SCHREIER, G. MARTELLO AND J. D. HARDY (*The Journal of Industrial Hygiene*, January, 1939) point out that the determination of mineral residue in the sputum of silicotics has only recently been studied. A brief sketch of previous work is given. The present workers determined quantitatively the amount of acid-insoluble mineral residue in the sputum of silicotics and non-silicotics. Sputum, preferably 100 cubic centimetres, is digested with sulphuric and nitric acid with a little boric acid added. The residue is washed, dried and weighed, and examined microscopically. Quantitative determinations of insoluble matter in sputum of patients suspected of silicosis are valuable diagnostically.

Pneumonia.

A. L. AGRANOT, A. O. DREOSTI AND D. ORDINAN (*The Lancet*, February 11, 1939) describe the results of treatment of pneumonia in Johannesburg with "M and B 693" or (2-(p-aminobenzenesulphonamideo)pyridine). Five hundred and fifty patients were included; controls were observed and there was no selection of patients. The diagnosis was made clinically when definite clinical signs of lobar consolidation could be detected. Both Europeans and non-Europeans were included in the series of patients observed. Treatment consisted of four tablets on admission to hospital and two tablets every four hours for seventy-two hours, followed by two tablets three times a day until the temperature had been normal for three days. The drug had no effect on serous effusions, empyema or unresolved pneumonia. A fall in the leucocyte count was observed twice and agranulocytosis once. The duration of fever and the length of stay in hospital did not differ between controls and treated patients among the native races. The mortality rate was 8% among treated patients and 18% among controls; but empyema and serous effusions were more frequent among the treated patients; vomiting and diarrhœa occurred in several treated patients. Among the Europeans treated the pyrexia was shorter. In another series of one hundred natives, with one hundred controls, the mortality rate was lower and the symptoms were milder in the treated patients. In this series the drug was not given until diagnosis was established. As this sometimes takes several days, it is suggested that treatment should be commenced as soon as the disease is reasonably suspected.

Congenital Cystic Lung.

T. HOLMES SELLORS (*Tubercle*, November-December, 1938), in a treatise on congenital cystic lung, describes the radiological distinctions between this disease and bronchiectasis. The congenital cysts are larger than the dilatations commonly seen in bronchiectasis, and the bronchi out of which the cysts open are of normal calibre and have no stenosis in their course; when they are oval their long axis does not necessarily correspond with that of the bronchi; cystic areas may be closely associated with normal bronchi and lung tissue. Inflammation plays no part in the ætiology of the cysts, though it is often a complication. Cysts may be found in the fœtus. Cysts may be single or multiple, large, medium-sized or small; and the small cysts may be lobar or patchy or bilateral and diffuse in distribution, or may involve a whole lung (the condition formerly known as universal bronchiectasis).

Intracranial Tuberculoma.

N. M. DOTT AND E. LEVIN (*Edinburgh Medical Journal*, January, 1939) state that tuberculomata account for about 2% to 4% of intracranial space-occupying lesions. Intracranial tuberculomata arise from the growth of miliary tubercles resulting from the deposition of blood-borne tubercle bacilli in the brain. Such miliary tubercles may heal; or if in a position to do so, they may soon discharge bacilli into the cerebro-spinal fluid and produce tuberculous meningitis (which is probably never primarily hæmatogenous); or they may grow, more or less rapidly and constantly, according to the number and viru-

lence of the bacilli in the original nodule and the state of resistance and allergy, local and general, and they may discharge bacilli into the cerebro-spinal fluid to set up tuberculous meningitis at any stage of the process. Diagnosis is difficult because calcification may be absent and there may be no sign of tuberculosis elsewhere. When increased intracranial pressure occurs, decompressive measures are urgently required. If operation is undertaken, either with or without knowledge of the nature of the lesion, total removal is the procedure of choice. Post-operative meningitis occurs in about 17% of cases—not so frequently as was formerly reported; but partial removal or biopsy of the tumour is very dangerous.

The Ætiology of Aneurysm.

J. H. MILLS AND B. T. HORTON (*Archives of Internal Medicine*, December, 1938) report 596 cases of aneurysm seen at the Mayo Clinic during a period of eleven years. Of 339 patients with thoracic aneurysm only 70% had syphilis, and of 80 with abdominal aneurysm only 9% had syphilis. Arteriosclerosis was regarded as the ætiological factor of nearly all the non-syphilitic aneurysms.

Tuberculous Empyema.

A. H. PENINGTON (*The British Journal of Tuberculosis*, January, 1939) has carried out experiments to throw light on the ætiology and pathology of tuberculous empyema. First a study was made of the morbid anatomy of the pleura in pulmonary tuberculosis and in empyema; and it was concluded that the presence of cavernous tuberculosis near the pleura provokes a pleural reaction, frequently with gross thickening of the subserous layer, and that tuberculous empyema is constantly associated with the rupture of a pulmonary focus through the visceral pleura. In the experimental study with rabbits it was found impossible to produce an empyema by simple inoculation of the pleural sac with tubercle bacilli even in the sensitized animal, though serous effusion nearly always occurred. Nor did subsequent trauma or pleural inoculation with whole blood lead to empyema. An empyema was obtained experimentally only when a caseating tuberculous focus extended from the lung to the pleura and ruptured. In those animals which developed empyema the effusion was always blood-stained first. If blood-stained fluid failed to appear, the effusion remained serous throughout its course.

Poisoning in Sydney.

W. E. FISHER AND A. G. CUMPSTON (*Proceedings of the Sydney Hospital Clinical Society*, March, 1939) have reviewed 458 cases of poisoning recorded at Sydney Hospital during the past seventeen years. Of these, 113 were accidental poisonings and 345 poisonings with suicidal intent. In the latter group "Lysol" was the poison employed in 156 cases, strychnine in 24, coal gas in 21, hydrochloric acid in 14, potassium permanganate in 12, and arsenic in 10. The number of cases of suicidal poisoning admitted to the hospital annually is declining, but the poisoning is fatal in an increasing proportion. One hundred and fifty-two persons, of whom 27 died, were admitted to hospital in the four years from 1922 to 1925; and 36, of whom 16 died, were admitted during the four years from 1935 to 1938.

Tuberculous Cervical Lymphadenitis Treated by Intraglandular Injection.

R. A. HUNTER (*Tubercle*, January, 1939) has treated with satisfactory results twenty-one patients with tuberculous cervical lymphadenitis by the repeated intraglandular injection of about 0·3 cubic centimetre of a compound of gelatine, acriflavine and calcium chloride ("G.A.C.C."). About six injections were given, either daily or at intervals of two or three days, and into different parts of the enlarged glands, first superficially and later more centrally. The "G.A.C.C." used contained only five parts *per centum* of gelatine instead of thirty parts as in the "G.A.C.C." used for intrapulmonary injections. Good results were obtained also by the application of similar treatment to enlarged cervical lymph glands not affected with tuberculosis.

Chemotherapy.

A. R. THOMPSON AND C. R. M. GREENFIELD (*The Lancet*, October 29, 1938) describe some results of chemotherapy in measles and whooping-cough. Modern opinion assigns an important role to *Streptococcus pyogenes* (Lancefield's Group *A*) as the secondary invader responsible for the more common and severe complications of these two diseases, especially those affecting the middle ear and lungs. Usually measles patients received a prophylactic injection of either scarlatinal or mixed scarlatinal and diphtheria antitoxin on admission to hospital. Three hundred and twenty-four measles patients received from one-half to one tablet (0·5 gramme) of "Prontosil Album" (Bayer) every four to eight hours, according to age. For those under one year of age the dose was half a tablet every eight hours, increased to one tablet every four hours between the ages of ten and fifteen years. Seventy-six patients were given similar doses of benzylsulphonamide. These doses were given for the first ten days, and half these doses were given throughout the patient's stay in hospital. The only toxic manifestations were rashes in two cases and slight cyanosis in 6% to 14% of cases. Drugs containing sulphur were avoided. Eight hundred and nineteen patients were not given drugs and were used as controls. Those treated with drugs were more severely ill than the controls. The results of the drug treatment appeared to be to diminish the frequency and severity of bronchopneumonia and to diminish the incidence and severity of *otitis media*. Rhinitis, which was probably largely streptococcal, and tonsillitis and adenitis, were similarly affected. Sulphanilamide ("Prontosil Album") appeared to be more effective, though slightly more toxic than its benzyl derivative. In whooping-cough similar treatment was adopted for 57 severely ill patients, who were compared with 187 controls. There was no effect on the paroxysmal manifestations of pertussis; but the drugs were of value in preventing pyogenic and pulmonary complications and in the treatment of pertussis bronchopneumonia, provided that the drug was employed at an early stage.

Non-Putrid Pulmonary Suppuration.

MARCY L. SUSSMAN (*American Journal of Roentgenology*, July, 1938) states that suppurative bronchopneumonia may be defined as a pneumonitis due to non-putrefactive pyogenic bacteria with the formation of pus in, and sometimes necrosis of, the bronchial walls and pulmonary parenchyma. It is to be differentiated from gangrenous bronchopneumonia, which is caused by putrefactive anaerobic organisms and which in its localized form represents the early stage of gangrenous putrid lung abscess and in its diffuse form is usually the result of a spread from a similar lesion. Suppurative bronchopneumonia is characterized by a tendency to spontaneous resolution, and in most cases complete recovery occurs. The average case pursues a mild clinical course. In the sporadic cases, just as in the epidemic cases, different stages of the disease may be present at the same time in different portions of the lungs. There may be, for example, slow resorption of a suppurative focus in one lung, with an abscess forming acutely in the other, perhaps with rupture into the pleura. Abscesses, when formed, are usually multiple. This is in contrast with gangrenous lung abscess, which is usually single and is confined to a definite broncho-pulmonary segment. The condition of the lung in suppurative bronchopneumonia might be anticipated from the fact that it is a diffuse disease and that necrosis of phlegmonous areas in the lungs gives rise to multiple suppurative foci, which only in certain cases achieve a large enough size to be classed as abscesses and to be identified as such by X ray examination. Since purulent bronchitis with destruction of the elastic tissue of the bronchioles is a constant feature, bronchial dilatation occurs regularly, but it is not always permanent. The dilatation appears rapidly, since there may be paresis of the bronchial muscles; it may be gone in a few months. Permanent dilatation with an interstitial fibrosis results in bronchiectasis.

British Medical Association News.

ANNUAL MEETING.

THE annual meeting of the Tasmanian Branch of the British Medical Association was held at Hobart on March 4, 1939, DR. RALPH WHISHAW, the President, in the chair.

Annual Report of the Council.

The annual report of the council for the year ended December 31, 1938, was read and adopted. The report is as follows.

The Branch council has pleasure in presenting its annual report for the year 1938 as follows:

The membership of the Branch, which was 92 at the beginning of 1938, was 87 at the beginning of 1939. Three new members have been elected, three have been transferred into the Branch, and six have resumed membership by payment of the overdue subscription within the period of grace, while six have left the State. One has died and one resigned; nine have lapsed through non-payment of their subscription for 1938.

Since the last annual meeting ten ordinary and three special meetings of the Branch have been held, the average attendance being 16·8.

Papers or addresses have been given by Dr. Brothers, Dr. Hamilton, Dr. Holman, Dr. Whishaw, Dr. Elliott, Dr. Fagan, Dr. Shugg and Dr. T. Giblin, and a film illustrating intravenous and retrograde pyelography was shown.

Thirteen meetings of the Branch council have been held, the attendances being as follows:

Dr. Whishaw	12	Dr. Fay	7
Dr. Holman	4	Dr. Hiller	13
Dr. T. Giblin	12	Dr. Craig	4
Dr. Newell	2	Dr. T. Hogg	7
Dr. Crowther	13	Dr. J. Walch	13
Dr. Gibson	8		

Five meetings of the Ethics Committee have been held.

The Branch has experienced another year of intense medico-political activity, this time in connexion with the Commonwealth Government's proposal for national health insurance. Early in the year, after negotiations between the National Insurance Commission and our Federal Council, the first proposed terms of service for doctors under national insurance were made public, and were greeted with a storm of disapproval from the profession. After further negotiations in the Federal sphere had failed to attain an acceptable compromise, the Commonwealth Government set up the Royal Commission to inquire into remuneration of doctors under the act. There followed a period of great activity, both for our Federal Executive and for the Branch, while evidence for the commission was being prepared. When the Royal Commission at last sat in Hobart we were able to call an adequate number of witnesses, whose evidence was very satisfactory. The Branch was fortunate in having Mr. R. C. Wright as its legal adviser. Mr. Wright went to a great deal of trouble in the selection and arrangement of the evidence, and displayed a thorough grasp of the case prepared by the leading counsel for the Association. The Branch also owes a debt of gratitude to all those members who took the trouble to fill in the *questionnaires* which were sent to them, and especially to those who were included in the preliminary selection of possible witnesses and who were asked to perform a great deal of work in the preparation of their evidence.

The fight which has been carried on by all the Branches in Australia, and especially by our Federal Executive, to secure reasonably satisfactory conditions of service and remuneration for the general practitioners if national health insurance comes into operation has cost the Association a great sum of money. To meet this expenditure it was necessary to make an appeal to our members for a subscription of £10 each to a special emergency fund. The appeal for voluntary subscriptions has resulted in the collection of about £470, which means that about half the members have responded. A special meeting of the Branch decided that it was unfair that this financial burden should be borne by some members and escaped by others, so it was decided that the call should be made compulsory by raising the annual subscription to £14 14s. for the year 1939.

The Branch council wishes to record its great appreciation of the work done during the year by our representatives on the Federal Council, Dr. W. L. Crowther and Dr. Stuart Gibson, and our committee, Dr. J. Rail Robertson. These gentlemen have had to abandon their practices on numerous occasions to attend meetings in Melbourne or Sydney, they have had to spend much time studying many lengthy documents concerned with the insurance schemes, and they have had to bear a heavy responsibility and put up with a great deal of ill-considered criticism.

Our Post-Graduate Committee arranged a course of lectures in April, when we were visited by Dr. S. V. Sewell and Mr. Charles Littlejohn. The meetings were attended and well appreciated by members. Our members also enjoyed the privilege of attending the State annual meeting of the College of Surgeons in November.

The Northern Division.

The following report of the Northern Division of the Branch was presented.

The following were the office-bearers for the year 1938: *Chairman*, Dr. C. Craig; *Vice-Chairman*, Dr. J. L. Grove; *Honorary Treasurer*, Dr. G. M. W. Clemons; *Honorary Auditor*, Dr. G. T. H. Harris; *Honorary Secretary*, Dr. T. G. H. Hogg; *Executive Committee*, Dr. J. Ramsay, Dr. J. L. R. Carter, Dr. A. Pryde.

Meetings.—Eleven meetings were held during the year, including the annual meeting and two special meetings. The average attendance was 14·8. At six of these meetings papers were presented, and at four clinical cases were demonstrated. Two meetings were devoted to the discussion of national health insurance.

Annual Post-Graduate Course.—The annual post-graduate course was held from November 12 to 15, inclusive. The lecturers were Dr. Julian Smith, junior, and Dr. Ian Wood. The following programme was carried out:

Dr. Julian Smith, junior: "Some Problems in Urology", "The Nature and Treatment of Inflammatory Conditions in the Right Iliac Fossa", "Carcinoma of the Rectum".

Dr. Ian Wood: "Blood Transfusion, with Special Reference to the Treatment of Bleeding Peptic Ulcer", "The Use and Abuse of Massive Intravenous Injections of Physiological Fluids".

Clinical cases were demonstrated in both medical and surgical wards. There was a record number of members and the attendance from Hobart and the country districts was greatly appreciated and added to the success of the course.

The fourth annual dinner was held at the Launceston Club on Saturday, November 12. Thirty members attended this function.

A golf competition was held at Kings Meadows on Sunday, November 13. A cup presented by the chairman was won by Dr. J. McDonald, with the score 72—6—66.

Library.—Subscriptions to journals have been continued and binding carried out as required.

Lodge Subcommittee.—The City Council intend to undertake an anti-diphtheria immunization scheme, and asked the members of the British Medical Association for their advice and help. The subcommittee appointed has met the City Council and has given a scheme by which school children under the age of twelve can be immunized.

New Year Honours.—Members of the Northern Division were very pleased to read that a great honour has been bestowed on one of their members, and we take this opportunity of congratulating Sir John Ramsay on his knighthood. To honour Sir John the Division arranged a

THE BRITISH MEDICAL ASSOCIATION (TASMANIAN BRANCH).

Statement of Receipts and Payments for Year ended December 31, 1938.

RECEIPTS.				£	s.	d.
To Balance as at January 1, 1938				240	15	0
„ Members' Fees—						
1938—95 at £4 4s.	£399	0	0			
1938— 4 at £2 2s.	8	8	0			
1937— 2 at £4 4s.	8	8	0			
1939—¼ year at £4 4s.	2	2	0			
Dr. Klausman, New South Wales Sub.	5	5	0			
Amount over banked	0	19	6			
				424	2	6
„ Interest on Fixed Deposit, Hobart Savings Bank				2	12	6
„ Interest, Commonwealth Inscribed Stock				10	2	6
„ Interest on Debenture, Australasian Medical Publishing Company, Limited				4	4	7
„ Interest on Fixed Deposit, £100				6	13	7
				£688	10	8
1939, January 1—						
To Balance at English, Scottish and Australian Bank	£373	11	0			
„ Cash in Hand	171	16	7			
„ Balance at Hobart Savings Bank	28	12	3			
				573	19	10

PAYMENTS.	£	s.	d.
By Crisp and Wright (Health Scheme)	10	10	0
„ Federal Council	9	12	0
„ Rent—Royal Society	10	0	0
„ Secretary's Honorarium	50	0	0
„ Petty Cash	17	9	2
„ Audit Fee—Adams and Bennetto	2	2	0
„ Hobart Technical College (Lantern)	1	0	0
„ Printing and Stationery	3	18	2
„ Refund (Sub., Dr. Klausman, to New South Wales)	5	5	0
„ Stamps	3	11	3
„ Bank Charges and Exchange	1	3	3
„ Balance	573	19	10
	£688	10	8

Statement of Assets.

	£	s.	d.
Cash at Banks and in Hand	573	19	10
Fixed Deposit, English, Scottish and Australian Bank	100	0	0
Fixed Deposit, Hobart Savings Bank	150	0	0
Commonwealth Inscribed Stock	300	0	0
Australasian Medical Publishing Company, Limited—Debenture	95	0	0
Furniture at Library	20	0	0
	£1,238	19	10

Audited and found correct.

ADAMS & BENNETTO,
Chartered Accountants (Aust.),
Auditors.

dinner at the Launceston Club on Tuesday, January 10. Twenty members attended. In proposing his health, Dr. Craig reviewed Sir John's career as a pioneer surgeon. In supporting Dr. Craig, Dr. Newell, Dr. Holman, Dr. Grove and Dr. Collan gave sidelights on Sir John. Each told us something special in the character of the man to whom we were paying honour. Sir John Ramsay responded.

Financial Statement.

The honorary treasurer's financial statement was read and adopted. The statement is published herewith.

Election of Office-Bearers.

The following were elected as office-bearers of the Branch for the ensuing year:

President-Elect: Dr. A. W. Shugg.
Vice-President: Dr. C. N. Atkins.
Honorary Treasurer: Dr. W. J. Freeman.
Honorary Secretary: Dr. J. H. B. Walch.
Members of Council: Dr. J. S. Reid, Dr. G. Clemons, Dr. W. E. L. H. Crowther, Dr. S. G. Gibson.

Induction of President.

Dr. Ralph Whishaw inducted Dr. W. P. Holman as President for the ensuing year.

President's Address.

Dr. Ralph Whishaw then read his president's address (see page 785).

SCIENTIFIC.

A MEETING of the Western Australian Branch of the British Medical Association was held at the Perth Hospital on April 19, 1939.

Value of the Bronchoscope.

DR. A. W. FARMER read a paper on the value of the bronchoscope as an aid to the diagnosis and treatment of lung disease.

Speaking of acute lung abscess, Dr. Farmer said that if a foreign body was present the use of the bronchoscope was obvious; but even when this was not the case, periodic emptying of the abscess and of the basal bronchi was an adjunct to the general treatment, as the following case showed.

An unmarried woman, aged twenty-two years, developed cough with offensive sputum on the twelfth day following teeth extraction under a general anæsthetic. Both the cough and the sputum increased, becoming more offensive day by day, and it was suspected that she had inhaled a tooth or portion thereof. She was sent to the city and examined with a bronchoscope for the first time on the twenty-first day. Examination revealed scattered offensive pus throughout her bronchial tree on the right side, more abundant in the lower lobe bronchi. At the mouth of the bronchus leading to the apex of the lower lobe a furuncular swelling with a white head was distinctly visible, and this was taken to be the drainage point of the abscess. X ray examination confirmed localization, and lipiodol was seen to spread itself around the abscess in a way characteristic of an acute lung abscess.

She was treated on general medical lines, the features of which were posture, an expectorant mixture combined with creosote and potassium iodide, daily injections of "Transpulmin", heliotherapy and short-wave diathermy. Her lung was aspirated at varying intervals of three to ten days, whenever indicated by discomfort and increasing odour of the sputum. The quantity of sputum was not greatly altered, as shown by a chart kept for this purpose, and aspiration did not produce an immediate drop in temperature; it did, however, cause a sense of well-being to the patient and almost entirely removed the odour from the sputum. A secondary anæmia was treated by "Collion". A month after the patient's admission to hospital sputum and cough had entirely ceased, but the outline of the abscess cavity could be distinctly seen on X ray examination. In order to produce absorption of this inflammatory area deep X ray therapy up to a dosage of 1,200 *r*, as recently advocated, would be given in an endeavour to destroy the leucocytic infiltration.

In bronchiectasis and chronic lung abscess great comfort could be given to the patient by a periodic aspiration, lavage if necessary, and injection of a mild antiseptic, such as "Mercurochrome" 1% *et cetera*. These patients were requested to report when they desired a treatment, and it was surprising how frequently they did so. This treatment caused very little disability. A very careful anæsthetization of the glottis was carried out, and this was followed by an injection into the trachea by the laryngeal syringe of a 3% cocaine solution with adrenaline and liquid paraffin, which was gravitated into each lung in turn. The patient rested for half an hour after the procedure and then returned to a normal day's work.

Stenosis of the trachea or bronchus could arise from (*a*) within, following trauma of a foreign body, and (*b*) from without, from surrounding inflammation or œdema. Stenosis of a main stem bronchus would cause bronchiolitis beyond the site of the obstruction. The treatment of this condition was, of course, bouginage.

Papillomata of the trachea or bronchus were easily accessible and could be treated by excision or diathermy if such were required.

Carcinomata of the bronchus lent themselves to accurate observation and accurate diagnosis by biopsy. Radon seeds could be implanted directly into the growth if such treatment was decided upon.

Finally, Dr. Farmer drew attention to a recent article in *The British Medical Journal* by Mortlock and Hudson, in which they assessed the value of the bronchoscope in tuberculosis. In this article the statement was made that lipiodol was not an irritant to a tuberculous lung, and in this Dr. Farmer completely concurred. He illustrated his remarks by reference to a case which was believed to be one of bronchiectasis, but which ultimately turned out to be one of tuberculosis. This patient's condition was always greatly improved following a lipiodol injection, and it was assumed that the iodine, rather than acting as an irritant, was in reality a valuable therapeutic agent.

Dr. Farmer concluded his talk with a demonstration of Mortlock's telescopic bronchoscope.

Post-Graduate Work.

A COURSE IN MEDICINE IN SYDNEY.

A COURSE suitable for candidates for the membership of the Royal Australasian College of Physicians examination will be held at the Prince Henry Hospital, Sydney, New South Wales, from June 5 to July 28, 1939. This course will also include the week-end course in electrocardiography to be held on June 10 and 11, and the demonstration of the *fundus oculi* at Sydney Hospital on July 5.

The programme is as follows:

Monday, June 5.—3 p.m., ward rounds (Dr. S. A. Smith).

Wednesday, June 7.—10 a.m., diabetic clinic; 2.30 p.m., ward rounds (Dr. R. Jeremy).

Thursday, June 8.—10 a.m., clinico-pathological demonstration (Dr. E. B. Jones and Dr. S. A. Smith); 2 p.m., "*Diabetes Mellitus*" (Dr. R. J. Millard); 3.15 p.m., ward rounds (Dr. S. A. Smith).

Friday, June 9.—9.30 a.m., ward rounds (Sir Charles Blackburn); 2 p.m., radiological demonstration (Dr. B. Anderson-Stuart).

Saturday, June 10.—10 a.m., "Infectious Diseases" (Dr. N. J. Symington); 2 p.m., special electrocardiographic course.

Sunday, June 11.—10 a.m., special electrocardiographic course.

Wednesday, June 14.—10 a.m., diabetic clinic; 2 p.m., "Diseases of the Chest" (Dr. W. A. Bye).

Thursday, June 15.—3 p.m., ward rounds (Dr. S. A. Smith).

Friday, June 16.—9.30 a.m., ward rounds (Sir Charles Blackburn).

Monday, June 19.—10 a.m., "Diseases of Children" (Dr. Laurence Hughes); 3 p.m., ward rounds (Dr. S. A. Smith).

Tuesday, June 20.—10 a.m., "Diseases of Children" (Dr. Laurence Hughes).

Wednesday, June 21.—10 a.m., "Diseases of Children" (Dr. Laurence Hughes); 2.30 p.m., ward rounds (Dr. R. Jeremy).

Thursday, June 22.—3 p.m., ward rounds (Dr. S. A. Smith).

Friday, June 23.—9.30 a.m., ward rounds (Sir Charles Blackburn).

Monday, June 26.—3 p.m., microscopical preparations of blood, bone marrow *et cetera* (Dr. E. B. Jones); 4.30 p.m., clinico-pathological conference.

Wednesday, June 28.—10 a.m., diabetic clinic; 2 p.m., "Diseases of the Chest" (Dr. W. A. Bye).

Thursday, June 29.—3 p.m., ward rounds (Dr. S. A. Smith).

Friday, June 30.—9.30 a.m., ward rounds (Sir Charles Blackburn).

Monday, July 3.—3 p.m., ward rounds (Dr. S. A. Smith).

Wednesday, July 5.—10 a.m., diabetic clinic; 2.30 p.m., demonstration of the *fundus oculi* (Sydney Hospital).

Thursday, July 6.—10 a.m., demonstration of bacteria and parasites (Dr. E. B. Jones); 3 p.m., ward rounds (Dr. S. A. Smith).

Friday, July 7.—9.30 a.m., ward rounds (Sir Charles Blackburn); 2 p.m., lecture on œdema (Dr. Allan Walker); 3.30 p.m., lecture on acidosis (Dr. C. G. McDonald).

Monday, July 10.—3 p.m., ward rounds (Dr. S. A. Smith); 4.30 p.m., library seminar.

Wednesday, July 12.—10 a.m., diabetic clinic; 2 p.m., "Diseases of the Chest" (Dr. W. A. Bye).

Thursday, July 13.—3.30 p.m., radiological demonstration (Dr. H. R. Sear).

Friday, July 14.—9.30 a.m., ward rounds (Sir Charles Blackburn).

Monday, July 17.—3 p.m., ward rounds (Dr. S. A. Smith).

Wednesday, July 19.—10 a.m., diabetic clinic; 2.30 p.m., ward rounds (Dr. R. Jeremy).

Thursday, July 20.—3 p.m., ward rounds (Dr. S. A. Smith).

Friday, July 21.—9.30 a.m., ward rounds (Sir Charles Blackburn).

Monday, July 24.—3 p.m., ward rounds (Dr. S. A. Smith); 4.30 p.m., clinico-pathological conference.

Wednesday, July 26.—10 a.m., diabetic clinic; 2.30 p.m., ward rounds (Dr. R. Jeremy).

Thursday, July 27.—10 a.m., demonstration of museum specimens (Dr. E. B. Jones); 2 p.m., ward rounds (Dr. S. A. Smith); 3.30 p.m., radiological demonstration (Dr. H. R. Sear).

Friday, July 28.—9.30 a.m., ward rounds (Sir Charles Blackburn); 2 p.m., "Allergy" (Dr. A. J. Collins); 3.15 p.m., "Physiology and Pathology of Renal Secretion" (Dr. L. W. Dunlop).

The diabetic clinic is open every Wednesday morning. No formal instruction has been arranged, but Dr. Millard is willing for candidates to visit the clinic whenever they desire on the days specified.

The fee for the full course is five guineas.

The above list includes three periods of concentrated instruction, namely, June 8 to 11, July 5 to 7, and July 26 to 28. They have been arranged for the convenience of country practitioners, and the fee for each period respectively is two guineas, anyone taking the three periods being registered for the full course.

Applications for registration, which must be accompanied by a remittance for the amount of the fee, must be made to the Secretary, New South Wales Post-Graduate Committee in Medicine, the Prince Henry Hospital, Little Bay.

Special Correspondence.

PARIS LETTER.

FROM OUR SPECIAL CORRESPONDENT.

THE fiftieth anniversary of the foundation of the Pasteur Institute actually occurred on November 14, 1938; but international affairs made it necessary to put forward its celebration until March 15 of this year. This celebration was the greatest scientific event of recent months; for the Pasteur Institute is, from the point of view of experimental and clinical research, one of the greatest centres—perhaps unique in the world—and the prototype of countless similar establishments. Let us profit, then, from this fiftieth anniversary to look through the beautiful book that Pasteur Vallery-Radot has devoted to his grandfather, in which such interesting memories are set down.

During the year 1888, Pasteur, busy each morning with his "*mordus*", was drawn during the day by the work of construction of the Pasteur Institute, which was being built in the rue Dutot. Eleven thousand metres of ground had been purchased from one owner alone, in the midst of market gardens. There, where not long before countless lettuces stood in line under glass, soon arose a building in the style of Louis XIII, which was destined to be at one and the same time an important dispensary for the treatment of rabies, a centre for the study of virulent and contagious diseases, and finally a teaching centre. The course in biological chemistry, of which Duclaux was professor at the Sorbonne, was to be transferred there. Roux was to give a course there in the technique of microbiology. The department of vaccination against malignant pustule, with which Chamberland was entrusted, had, between 1882 and 1887, vaccinated more than 1,600,000 sheep and nearly 200,000 head of cattle. There were besides, under the general direction of Metchnikoff, individual laboratories, which were to be like so many cells for the workers in the institute.

On November 14, in the great library of the new institute, politicians, colleagues, friends, co-workers, disciples, all were there. "You know", said Grancher, in the speech he made, "that Monsieur Pasteur is an innovator. His discoveries have been for biological chemistry, for veterinary science and for medicine, not regular progress, but a radical revolution . . ." And the speaker dwelt on the fact that the mortality rate for persons treated after bites from dogs with rabies had, from 16%, fallen below 1%.

If such statistics were eloquent, those of the public subscription which had made it possible to build the institute were no less eloquent. Rich and poor, everyone had subscribed; the total reached 2,586,680 gold francs, to which were added the gifts of the Tsar, the Emperor of Brazil and the Sultan. As the cost of establishment was 1,563,786 francs, there remained, for the endowment of the Pasteur Institute, a little more than one million. In addition, Pasteur, as well as his disciples Chamberland and Roux, handed over to the Pasteur Institute the profits of the sale, in France, of vaccines discovered in the laboratory, and so the capital of the endowment was to be increased each year.

"At last it is built", said Pasteur, in his inaugural address, "this great house, of which it could be said that there is not one stone which is not the material emblem of a generous thought. All the virtues have subscribed to build this home of work."

Having thus brought to mind a few particularly moving memories of this first ceremony, which inaugurated such new and fruitful methods in medicine, let us pass on to the ceremony of March 15 last.

It took place in the presence of M. Albert Lebrun, President of the French Republic, and of numerous ministers. Louis Martin, director of the Paris Pasteur Institute, spoke first, and described the Pasteur techniques and methods. He showed how Pasteur came first of all to separate left tartaric acid from right tartaric acid, and then to prove that fermentation succeeds in attacking and destroying the latter only, leaving left tartaric acid untouched; he thus got to the heart of the study of the biological phenomena of fermentation. A few years later, in 1877, Pasteur quite naturally undertook the study of anthrax, and came to the conclusion that by reducing the virulence of the germ one could achieve immunization, a method which he forthwith applied to rabies.

Emile Duclaux, who founded with his own money the famous *Annales de l'Institut Pasteur*, subsequently carried on by the *Bulletin de l'Institut Pasteur*, and Emile Roux, who had first devoted himself to the establishment of an organization for the teaching of bacteriology, together succeeded Pasteur. At that time, as Martin reminds us, Roux and Nocard perfected technique, Chamberland gave us the candle filter and the autoclave, Metchnikoff and Bordet tackled the big problems of immunity, and Yersin, who discovered the plague bacillus, devoted himself to the study of tropical diseases. Later, Calmette procured the establishment of a department for the study of tuberculosis and the preparation of "B.C.G." vaccine. The latest extension to the Pasteur Institute, inaugurated last year, is that of Garches, which is destined for the preparation of anatoxins and the study of antigens.

M. Martin also recalled the important part that Fourneau and Salimbeni played in the development of our knowledge of the therapeutic value of the sulphonamides. In conclusion, he called attention to the strange coincidence by which the whole series of Pasteur's investigations sprang from a crystallographer's work, whilst today, since the work of Stanley and other American research workers, the conclusion had been arrived at that viruses are crystallizable.

Another address given on this occasion was that of Pasteur Vallery-Radot on the Pasteur Institute overseas, at Saigon, Hanoi, Dalat, Tunis, Algiers, Kindia (Guinea), Brazzaville, Dakar, Tangiers, Casablanca, Madagascar and Martinique.

The fine address of G. Ramon, to which I referred in my last letter, was devoted to the fiftieth anniversary of a piece of work eminently in the Pasteur tradition—the fight against diphtheria. It was actually in 1888 that Emile Roux and Yersin proved that the bacillus of diphtheria acted by its toxins, a discovery that opened up a new and entirely different path from that which Pasteur had inaugurated with the attenuation of virulence. An attempt was made, therefore, to discover the antidote of the poison thus manufactured. It was Behring and

Kitasato who discovered diphtheria antitoxin in animals treated by injections of cultures of the diphtheria bacillus, an antitoxin which was to make possible the serotherapeutic treatment of diphtheria, which Emile Roux succeeded in making practical and efficacious.

The representatives of foreign countries had as spokesman Van Loghem. In a speech, humble and full of emotion, the great Dutch bacteriologist spoke of the fame of Pasteur's teaching throughout the world. The exceptionally brilliant audience, amongst which were to be seen Dopter and Sacquepée, whose names are so closely linked, Ballet, Béchard, Bernard, Bezançon, Bianchard, Debré, Marchoux, Mesnil, Sergent, and many other famous French scientists, gave the foreign visitors a great ovation.

France, now that there is a certain recoil, can congratulate herself that by taking in several hundred thousand Spanish refugees she has not had to suffer any epidemics. But the sheltering of this multitude of individuals, bereft of all livelihood, is an extraordinary responsibility, of which there is no example in the history of the world, and of which France is actually alone in bearing almost the entire burden.

Amongst the most interesting communications, from the practical point of view, which have been made during these last months at the Academy of Medicine, I must specially mention that of H. Vincent (January 17, 1939) on colon bacillus antiserum therapy in grave and complicated appendicitis. In this communication H. Vincent was in fact replying to an earlier communication from Weinberg (November 29, 1938), showing that polyvalent gangrene antiserum was useful as a prophylactic measure, notably in cases in which operation could not be performed urgently. According to H. Vincent, peritoneal or toxic complications of appendicitis originate in 95% of cases in the *Bacillus coli communis*. In these circumstances colon bacillus antiserum therapy is indicated as an adjuvant of surgical treatment. In 1,271 cases of very grave appendicitis the number of recoveries was 1,217 (96%).

Weinberg pointed out, regarding this communication, that in fact gangrene antiserum was very much used in France as a preventive measure in complications following surgical interference in gastro-intestinal or genito-urinary conditions. Pierre Duval, who also took part in the discussion, believes that gangrene or colon bacillus antiserum therapy cannot be admitted except as an adjuvant to operation.

Jean Troisier and Mademoiselle Sifferlen announced, on February 14, 1939, that in a very interesting experiment they had succeeded, by means of insufflation of small doses of cultures of the tubercle bacillus, in producing in monkeys a primary ganglio-pulmonary complex absolutely identical with that observed in young humans. These lesions were accompanied by considerable cheesy adenopathy and bacillæmia proved by inoculation.

I must also record a communication from A. Lasnet (March 7, 1939) with reference to a six months' sanitary mission to the south of China, during which more than two million vaccinations against smallpox and cholera were carried out.

G. Dequidt (March 14, 1939), Inspector-General of Administrative Services for the Ministry of the Interior, pointed out that in France vacation colonies are insufficiently developed. According to districts, 5% to 35% of children benefit by colonies of this type, and the average is not yet as great as 10%, whilst 20% of children at least are in need of a supervised stay of at least six weeks.

Finally, G. Petit, P. Gley and Béraut (March 28, 1939) have succeeded, by the administration of benzoate of di-hydro-folliculine to dogs, in bringing about in a few days, if not prostatic hypertrophy, at least an increase in size of the ureter, perhaps histologically a stage in the development of adenoma; the interest of this discovery, from the point of view of the pathogenesis of hypertrophy of the prostate, is certainly considerable.

Amongst the scientific events which have taken place during the last few months, and which must be mentioned, figures the inaugural lecture of Professor Clovis Vincent, who has just been appointed to the chair of neurosurgery at the University of Paris; the chair was established by the generosity of the Rockefeller Foundation. Clovis Vincent was first of all a medical practitioner; then, after a fruitful period of collaboration with the great French surgeon de Martel, he himself became a surgeon specializing in the head. In passing, French neuro-surgery, if it has not had illustrious heralds like MacEwen and Horsley in England, like Cushing in the United States of America, *et cetera*, does at the present time figure largely in the world with de Martel and Clovis Vincent. It was Babinski, the discoverer of the "sign" bearing his name, who worked hard in the establishment and development of neuro-surgery in France, chiefly by his admirable research on the localization of medullary lesions.

On January 14, 1939, the anniversary of the death of Fernand Widal, a meeting was held to commemorate the clinical skill of which Widal was a past master. It was he, as we know, who introduced into everyday practice the diagnosis of typhoid fever by the agglutination test, a phenomenon which until his time had remained in the domain of bacteriology. He also carried out important research work on the cytodiagnosis of the cerebro-spinal fluid, and demonstrated the hydropigenous action of sodium chloride. Measurement of the concentration of urea in the blood was also introduced by him; and finally we know what a field of clinical research he was to open up by being amongst the first of all those who studied allergic diseases and the meaning and importance of colloidal shock, as observed, for example, in paroxysmal hæmoglobinuria *a frigore*. He also succeeded in proving the existence, in addition to the anaphylaxis of Charles Richet produced by a heterogeneous specific albumin, of shock brought about by cold, effort, emotion *et cetera*. We could go on endlessly recounting the work done by Widal, which is constantly recalled in France as well as abroad. These examples are sufficient to show that this man could to an exceptional degree combine clinical and laboratory medicine, observation of man and experiment on the animal.

The gynæcological courses held on March 11 and 12, 1939, at Bordeaux, were most successful. Amongst the reports presented must be mentioned that of Anderodias on post-abortal and *post partum* abscess of the uterus, that of Aubertin on the effect of diabetes on menstruation, that of G. Dubreuil and Jeanneney on the indications for the use of the gonad-stimulating hormones of pituitary origin *et cetera*.

Finally, I have to report the death of a famous man, Antoine Béclère, who very early became interested in X rays. In 1896, actually, at the age of forty years, encouraged by the famous Charles Bouchard, he began to study physics, and set up, at his own expense, the first X ray apparatus in the hospitals of Paris. From then he began the systematic examination of the heart and lungs of his patients, and proceeded to the treatment of various affections (leuchæmia, uterine fibromata, cancer, cutaneous tuberculosis). His fame abroad rapidly became immense, so that in 1936, when he was eighty years old, the famous publication *Strahlentherapie* devoted to him a "*Festschift*" of 123 articles contributed by authors belonging to 29 different nations.

The falling birth rate engrosses the attention of everyone in France; and mention must be made, amongst establishments scientifically combating this state of affairs, of that set up by Hecqueville (1871-1935); he sought to develop adoption, in order to regenerate the French race, which was threatened with extinction. This is a system which carries more weight from the fact that for centuries it was employed in ancient Rome by the nobility. This foundation includes a centre of studies dealing with three series of problems, biological heredity, the care of young children and, naturally, assistance to deserted children. It includes also a model nursery, with students, for homeless children sent by the delegates of the district branches. To this department is attached a registry for couples anxious to adopt a child. In short, it is a rationally constituted establishment, from which we may expect much.

Correspondence.

PETROL APPLIED TO ULCERS.

SIR: I was consulted by a nurse concerning three ulcers of the left leg in its lower third and two on the dorsum of the right foot, which were of six weeks' duration and had resisted many kinds of treatment. The ulcers were caused by accidental spilling of fuming nitric acid.

On examination the ulcers varied from half an inch to three-quarters of an inch in diameter and were of the deep crater-like type with indolent bases. The exhibition of hypertonic saline, red lotion and scarlet red ointment had been of no avail.

I instructed the patient to apply to the ulcers gauze soaked in petrol, leaving on for ten to twenty minutes twice or thrice daily. The effect was dramatic, the ulcers healing with rapidity.

This procedure, I believe, is the method of choice in a Viennese clinic for extensive sluggish electrical burns.

Yours, etc.,

A. M. WATKINS, M.B., B.S. (Melb.).

Roseville,
New South Wales,
April 6, 1939.

RECONSTRUCTION IN VAGINAL ATRESIA.

SIR: In the *American Journal of Obstetrics and Gynecology* for October, 1938, appears an article written by Dr. V. S. Counseller on "Congenital Absence and Traumatic Obliteration of Vagina and its Treatment with Inlaying Thiersch Grafts". He writes of it as a new method or one suggested by McIndoe quite recently, whereas in point of fact I believe I am right in claiming priority for this operation, which I first did in 1922, and published a description of it in 1924. The description was published under "Thiersch Pressure Grafts in other Situations" in my book on "Facial Surgery" (Livingstone, 1924), page 34, and therefore might not be seen by a gynæcologist. The description is as follows:

> A case which demonstrates its efficiency more than perhaps any other is one in which with my colleague, Dr. North, we successfully established and grafted an entirely new vagina by this method. The patient, an exceedingly well-developed girl of twenty, had never menstruated, though she had suffered from menstrual pains. No trace of vaginal orifice could be seen, nor uterus palpated in its normal position. At the patient's urgent wish we operated. The abdomen was opened and a small infantile bicornuate uterus found. No cervical orifice or canal could be demonstrated. A vaginal canal was established from the perinæum, starting from its normal situation, and the uterus was sutured to the upper end of this canal. An impression of the artefact vagina was next obtained with stent on a metal mould; this was covered with Thiersch grafts obtained from both arms and secured to the stent with fine catgut ligatures. The whole was then reinserted into the vagina, and the latter closed entirely by suturing the lower end together. The stent was removed in ten days, leaving the Thiersch graft beautifully lining the vagina. The lower end, which had previously been sutured, remained to be grafted. This was done by cutting flaps from the well-developed labia minora on each side and swinging them backwards round the vaginal walls to meet in the mid-line posteriorly. These grafts also were quite successful. The patient now has an excellent and satisfactory vagina, though it remains to be seen whether the uterus will ever become functional.

Hence I do not think it is quite correct or fair to refer to the operation as "Counseller's operation". Moreover, my method of utilizing portion of the *labia minora* for lining the lower end of the canal is a very distinct advantage and is not realized apparently by Dr. Counseller.

Yours, etc.,

H. P. PICKERILL.

Kelvin Chambers,
Wellington,
New Zealand.
April 26, 1939.

THE PROBLEM OF THE BACTERIOLOGICAL CURE OF SYPHILIS AND GONORRHŒA.

SIR: The organisms of these diseases find their way into the bowel and can live in the fæces for years. We can treat the lesions caused by their migration therefrom, but so far we have not found any effective method of killing them in the fæces.

In all probability there are many people who have been infected with syphilis and have never been aware of it because the organism has met antagonistic bacteria in the bowel and the others have been eliminated; but we have no absolute proof that they can be considered as definitely cured. The cure of a gonococcal infection would also depend on the destruction of the germ in the bowel.

Now the primary condition for destruction and elimination of microbes is a healthy bowel, free from kinks and, above all, enteroptosis. This latter means stasis, increase of *Bacillus coli communis* and pressure on the pelvic organs preventing their complete discharge from the body and causing all sorts of lesions. The *Bacillus coli communis* is the dangerous germ.

I am strongly of opinion that if we hope to cure syphilis or gonorrhœa it is imperative to correct any form of intestinal stasis—constipation, adhesions *et cetera*, but above all to correct the ptosis and remove the pressure from the pelvic organs of man or woman. If we do this the organisms can be satisfactorily eliminated in the great majority of cases—at least I think so.

Yours, etc.,

J. MORRIS ROE.

Victory Chambers,
Queen Street,
Brisbane.
May 5, 1939.

THE RESULTS OF OPERATIONS FOR CONGENITAL PYLORIC STENOSIS.

SIR: Following the appearance in a recent number of THE MEDICAL JOURNAL OF AUSTRALIA of an article dealing with treatment and mortality rates in babies operated on for congenital pyloric stenosis, I have investigated the cases which have occurred at the Adelaide Children's Hospital during a period from the beginning of 1933 until the end of 1938.

I selected the year 1933, as on January 1 of that year I commenced duties as medical superintendent, and during the period under review I have had an uninterrupted association with the hospital and have personal knowledge of a considerable number of these cases.

This series comprises all the cases operated on at the Adelaide Children's Hospital during the years 1933-1938 inclusive. In all, eight surgeons are represented in the treatment, which has been more or less of a standard nature.

If the child was very dehydrated, fluid was administered by means of a subcutaneous saline.

A stomach wash-out was given one to two hours before operation.

A Rammstedt operation through a vertical muscle-splitting incision was carried out in all cases. In the majority an ether anæsthetic was administered, the remainder being performed under local anæsthesia by means of 0·5% "Novocain". Three of the fatal cases were operated upon under local anæsthesia; but of course this is no condemnation of the method, as this form of anæsthesia was almost invariably used for the worst risks.

The post-operative treatment consisted of the feeding of gradually increasing amounts of breast milk or of lactone syrup milk mixtures.

In no case was any intravenous therapy administered preoperatively; but in one case several small blood transfusions were given after the operation because of the child's failure to thrive. In this case the stenosis was overcome by the operation, but there was only a very slow gain of weight and he eventually died four months after operation from bronchopneumonia. In spite of the long period between operation and death, this case is included in the mortality figures.

The following are the details of our cases.

Year.	Cases.	Deaths.
1933	7	—
1934	7	1
1935	6	1
1936	13	1 (4 months after operation)
1937	9	1
1938	8	—
Total	50	4

I trust this will be suitable for publication in The Medical Journal of Australia.

Yours, etc.,

Douglas G. McKay, M.B., B.S. (Adel.), F.R.C.S. (Edin.), F.R.A.C.S., Honorary Assistant Surgeon, Adelaide Children's Hospital.

Lister House,
196, North Terrace,
Adelaide.
April 29, 1939.

THE BEGINNINGS OF INFANT WELFARE IN SOUTH AUSTRALIA.

Sir: I read with interest Dr. Armstrong's comments on Sir Robert Wade's Charles MacKay Lecture and would like to give the history of child welfare in South Australia.

Firstly, I must congratulate Dr. Armstrong on his excellent work in New South Wales; he undoubtedly initiated infant welfare work in Australia.

Dr. Thomas Borthwick, Medical Officer of Health for Adelaide, gave me an introduction to Dr. Armstrong in about 1909, and I remember calling on him to make inquiries about his infant welfare work. At this time I saw the Alice Rawson School for Mothers in Sydney, which was also a beginning of the same work unassociated with Sir Truby King.

Here in South Australia the infant welfare movement was begun by Dr. Thomas Borthwick in 1907. First of all he issued pamphlets to nursing mothers, obtaining their names from the registrar, and later, in 1910, his nurses visited the poorer mothers, giving advice and encouraging breast feeding. This continued until about 1914. In 1909, however, the work of Professor Budin, of Paris, and the Huddersfield Municipality had made it apparent that it was possible to reduce infant mortality by the education and supervision of mothers.

In September, 1909, a meeting was called by Mrs. J. P. Morice, and the welfare centre of St. Pancras, London, was chosen as a model, partly because Mr. McDougall, who had worked there, was visiting Adelaide and could be consulted. A centre was opened in the Franklin Street Kindergarten, and from this small beginning has grown the present widespread organization now known as the Mothers and Babies' Health Association.

Various landmarks may be noted in its development: the first Government grant of £100 a year in 1911, the first municipal contribution by the East Torrens County Board in 1916, the first subsidy by the Adelaide City Council in 1917, the opening of the first country centre at Port Pirie in 1921, the introduction of the Baby Health train in 1932 to serve a group of country centres, the publication of a mothercraft book and the establishment of a training school for nurses last year. The present association has 106 centres (64 country and 42 metropolitan), with attendances numbering 100,256 last year.

South Australia is proud of the improvement shown in its infant mortality rate. In 1909 it was 69·50 per 1,000, and in 1938, 30·50 per 1,000—the lowest in the world.

Sir Truby King visited Adelaide in 1919 and was shown all phases of the work. I am sure he would have made no claim to playing any part in the establishment of infant welfare work in this State.

Yours, etc.,

Helen M. Mayo,
Chief Honorary Medical Officer.

Mothers and Babies' Health Association,
48, Wright Street,
Adelaide,
May 9, 1939.

BALKAN PEACE MANIFESTO.

Sir: The peace manifesto from the Balkan Medical Union published in your issue of April 22 is a very human document and full of common sense. Three and a half years ago 340 psychologists and psychiatrists from 27 countries, in a manifesto addressed to the statesmen of the world, analysed war psychology and called upon the leaders of countries to renounce fallacies that the war spirit had fostered and to lead their people to a right attitude to other nations. The response was not overwhelming, as might have been expected from the diverse attitudes of the people addressed.

The present appeal, however, with its paramount concern to the medical profession, should be sure of its mark. A fitting response would be the formation of war prophylaxis sections whose business would be to stimulate medical and lay interest in war prevention and establish relationships with similar sections in other countries.

In these last few months the peoples of the world have become articulate in their demand for peace. What tremendous momentum this movement would acquire from a majority declaration of the medical profession of the world that the bloody stupidity and hellish cruelty of war shall no longer be tolerated.

Yours, etc.,

T. W. Hoogarth.

195, Union Road,
Surrey Hills,
Melbourne.
May 15, 1939.

WORKERS' COMPENSATION PRACTICE.

Sir: Most general practitioners who deal with workers' compensation cases and who know how flagrantly the letter and the spirit of the *Workers' Compensation Act* is flouted and evaded by some insurance companies and self-insurers must have felt a keen disappointment at the decision of the Government not to appoint a select committee to inquire into these abuses. However, the Minister for Social Services, Mr. Richardson, is reported (*The Sydney Morning Herald*) as saying in the House "that he would take immediate action if anyone showed him that any firm had directed an injured employee where to go for medical attention". He evidently had in mind the right given an injured worker under the act of choosing his own medical attendant, and he is evidently under the misapprehension that every worker can freely exercise this right. The fact is that in many factories *et cetera* notices are displayed instructing injured workers

to report direct to doctors employed by insurance companies. In large concerns carrying their own insurance this is also a frequent instruction. Possibly the instructions do not amount to compulsion, but it is obvious that many workers carry out the instructions through ignorance of their rights under the act, and many others because they are not prepared to prejudice the tenure of their position with their employer by disobeying the instructions. In the ordinary illnesses of life it should be an inalienable right of any free Australian to choose his own medical attendant. How much more important is this right when he is suffering injuries the subject of litigation, when, in the absence of his own doctor's attention, the whole of the medical observations on his case would be exclusively in the hands of his insurers? Mr. Richardson has issued an open invitation with a promise of "immediate action", and it is an opportunity which our Association should take immediately and collect from its members a representative and irrefutable number of instances of "firms directing injured workers where to go". From a point of medical ethics I cannot see how any doctor, not under specific contract to an insurance company, who has cases "directed" to him is doing other than countenancing and condoning "cavassing" on his behalf.

Yours, etc.,

R. D. DAVEY.

Croydon Park,
May 17, 1939.

The Royal Australasian College of Surgeons.

GEORGE ADLINGTON SYME RESEARCH SCHOLARSHIP, 1939.

THE Council of the Royal Australasian College of Surgeons invites applications for the George Adlington Syme Research Scholarship for 1939. The scholarship is valued at £50. Applicants are requested to give full details of the research work which they desire to undertake, and they are informed that this work should be clinical in type. The successful applicant must undertake to publish, in *The Australian and New Zealand Journal of Surgery*, a paper recording the result of his or her work, should the council so desire. Any further information required may be obtained from the secretary of the college, with whom applications must be lodged on or before July 31, 1939.

Medical Prizes.

THE FRANCIS AMORY SEPTENNIAL PRIZE OF THE AMERICAN ACADEMY OF ARTS AND SCIENCES.

IN compliance with the requirements of a gift under the will of the late Francis Amory, of Beverly, Massachusetts, United States of America, the American Academy of Arts and Sciences announces the offer of a septennial prize for outstanding work with reference to the alleviation or cure of diseases affecting the human genital organs, to be known as the Francis Amory Septennial Prize. The gift provides a fund, the income of which may be awarded for conspicuously meritorious contributions to the field of knowledge "during the said septennial period next preceding any award thereof, through experiment, study or otherwise . . . in the diseases of the human sexual generative organs in general". The prize may be awarded to any individual or individuals for work of "extraordinary or exceptional merit" in this field.

In case there is work of a quality to warrant it, the first award will be made in 1940. The total amount of the award will exceed ten thousand dollars, and may be given in one or more awards. It rests solely within the discretion of the academy whether an award shall be made at the end of any given seven-year period, and also whether on any occasion the prize shall be awarded to more than a single individual.

While there will be no formal nominations, and no formal essays or treatises will be required, the committee invites suggestions, which should be made to the Amory Fund Committee, care of the American Academy of Arts and Sciences, 28, Newbury Street, Boston, Massachusetts, United States of America.

Congresses.

INTERNATIONAL CONGRESS OF DERMATOLOGY AND SYPHILOLOGY.

THE tenth International Congress of Dermatology and Syphilology will be held at New York in September, 1940. The executive secretary, Dr. Paul O'Leary, of the Mayo Clinic, wishes it to be known that papers for the "volunteer programme" will be limited to papers "that deal only with new thoughts or new development of thoughts in the field of dermatology". Prospective authors will be asked to submit a brief abstract of their work when they request a place on the volunteer programme. No papers will be accepted to be read *in absentia* or "by title only". Australian dermatologists wishing to read papers at this congress are invited to communicate with Dr. Paul O'Leary at the Mayo Clinic. Dr. E. H. Molesworth, of Sydney, is the Australian secretary for the organization.

Proceedings of the Australian Medical Boards.

SOUTH AUSTRALIA.

THE undermentioned have been registered, pursuant to the provisions of the *Medical Practitioners Act*, 1919 to 1935, of South Australia, as duly qualified medical practitioners:

Kaufmann, Hermann, L.R.C.P. and S. (Edinburgh), L.R.F.P.S. (Glasgow), 1939, Adelaide.

Rosenbaum, Paul, L.R.C.P. and S. (Edinburgh), L.R.F.P.S. (Glasgow), 1938, Adelaide.

Brandon-Jones, Mary, M.R.C.S. (England), L.R.C.P. (London), 1938, North Adelaide.

Obituary.

CLAUDE TIDSWELL COOPER.

WE regret to announce the death of Dr. Claude Tidswell Cooper, which occurred on May 10, 1939, at Adelaide, South Australia.

Books Received.

THE COMMON DISEASES OF THE SKIN: A HANDBOOK FOR STUDENTS AND MEDICAL PRACTITIONERS, by R. C. Low, M.D., F.R.C.P.E., F.R.S.E.; Third Edition; 1939. Edinburgh: Oliver and Boyd. Crown 8vo, pp. 333, with 148 illustrations, 8 of which are in colour. Price: 10s. 6d. net.

MEDICAL ORGANISATION AND SURGICAL PRACTICE IN AIR RAIDS, by P. H. Mitchiner, C.B.E., T.D., M.D., M.S., F.R.C.S., and E. M. Cowell, D.S.O., T.D., M.D., B.S., F.R.C.S., with a foreword by C. Wallace, Bt., K.C.M.G., C.B., F.R.C.S.; 1939. London: J. and A. Churchill Limited. Large crown 8vo, pp. 255, with 50 illustrations, including 1 coloured plate. Price: 10s. 6d. net.

CLASSIFIED AND ANNOTATED BIBLIOGRAPHY OF SIR WILLIAM OSLER'S PUBLICATIONS (BASED ON THE CHRONOLOGICAL BIBLIOGRAPHY BY MINNIE WRIGHT BLOGG), edited by M. E. Abbott, B.A., M.D., LL.D.; Second Edition, revised and indexed; 1939. Montreal: The Medical Museum, McGill University. Medium 8vo, pp. 177, with illustrations. Price: $2.25 net.

Nominations and Elections.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Beatty, Joan Checkley, M.B., B.S., 1939 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown.

Williams, Fenwick D'Arcy Moore, M.B., B.S., 1939 (Univ. Sydney), Sydney Hospital, Sydney.

The undermentioned have been elected members of the South Australian Branch of the British Medical Association:

Barker, John Edward, M.R.C.S., L.R.C.P. (England), 1938, Alpha Road, Prospect.

Bowering, Owen Wheatley, M.B., 1938, B.S., 1939 (Univ. Adelaide), Blyth.

Diary for the Month.

JUNE 1.—South Australian Branch, B.M.A.: Council.
JUNE 2.—Queensland Branch, B.M.A.: Branch: Joseph Bancroft Memorial Lecture.
JUNE 6.—New South Wales Branch, B.M.A.: Organization and Science Committee.
JUNE 7.—Victorian Branch, B.M.A.: Branch.
JUNE 7.—Western Australian Branch, B.M.A.: Council.
JUNE 9.—Queensland Branch, B.M.A.: Council.
JUNE 13.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
JUNE 20.—New South Wales Branch, B.M.A.: Ethics Committee.
JUNE 21.—Western Australian Branch, B.M.A.: Branch.
JUNE 22.—New South Wales Branch, B.M.A.: Clinical Meeting.
JUNE 26.—Queensland Branch, B.M.A.: Council.
JUNE 27.—New South Wales Branch, B.M.A.: Medical Politics Committee.
JUNE 28.—South Australian Branch, B.M.A.: Annual meeting.
JULY 6.—South Australian Branch, B.M.A.: Council.
JULY 27.—South Australian Branch, B.M.A.: Branch.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser", pages xvi to xix.

DEPARTMENT OF PUBLIC INSTRUCTION, MELBOURNE, VICTORIA: Medical Officer.

DEVON PUBLIC HOSPITAL, LATROBE, TASMANIA: Surgeon Superintendent.

INNISFAIL HOSPITALS BOARD, INNISFAIL, QUEENSLAND: Assistant Medical Officer.

QUEEN VICTORIA HOSPITAL, MELBOURNE, VICTORIA: Medical Superintendent.

ROYAL ALEXANDRA HOSPITAL FOR CHILDREN, CONVALESCENT HOME, COLLAROY, NEW SOUTH WALES: Honorary Officer.

SAINT VINCENT'S HOSPITAL, SYDNEY, NEW SOUTH WALES: Assistant Orthopædic Surgeon.

SYDNEY HOSPITAL, SYDNEY, NEW SOUTH WALES: Honorary Clinical Assistant.

TOOWOOMBA HOSPITALS BOARD, TOOWOOMBA, QUEENSLAND: Resident Medical Officer.

THE BROKEN HILL AND DISTRICT HOSPITAL, NEW SOUTH WALES: Senior Resident Medical Officer.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCHES.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 135, Macquarie Street, Sydney.	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company Limited. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association, Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17.	Brisbane Associate Friendly Societies' Medical Institute. Proserpine District Hospital. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.
SOUTH AUSTRALIAN: Secretary, 178, North Terrace, Adelaide.	All Lodge appointments in South Australia. All Contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, 205, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

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